

Student Opportunity outcomes framework research: in-depth study

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ABBREVIATIONS

EEF	Education Endowment Foundation
FE	Further Education
HE	Higher Education
HEAT	Higher Education Access Tracker
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency
HMRC	HM Revenue and Customs
ILR	Individualised Learner Record
NNCO	National networks for collaborative outreach
NPD	National Pupil Database
NSP	National Scholarship Programme
NSS	National Student Survey
OFFA	Office for Fair Access
POLAR	Participation of Local Areas classification groups
RCT	Randomised control trial
SLC	Student Loans Company
SO	(HEFCE's) Student Opportunity (funding)
UCAS	University and Colleges Admissions Service
UK PIs	UK Performance Indicators
ULN	Unique learner number
UPN	Unique pupil number
WP	Widening Participation
WPSA	Widening Participation Strategic Assessment

EXECUTIVE SUMMARY

- 0.1. This report is the final output of one of two related projects that aim to develop an evaluation framework to better demonstrate the impact of funding to widen participation in higher education (HE). The Higher Education Funding Council for England (HEFCE) commissioned CFE Research, working in collaboration with economists from the University of Sussex and the University of Sheffield and Professor Liz Thomas, to develop a framework for evaluating the impact of activities and spending designed to improve student access to and success in HE.
- 0.2. This report collates and assesses evidence of the impact of widening participation (WP) and explores some of the benefits and challenges in improving the evidence base. It describes the development of an evaluation framework for WP and reports the results of consultations with higher education institutions (HEIs). Using insights from approaches taken in other sectors, we recommend what can be done now, and in the future, to produce stronger evidence. The report is accompanied by supplementary case studies illustrating evidence of impact and focusing on different aspects of WP.
- 0.3. The sister project investigated the feasibility of collecting additional data from institutions to evidence the impact of WP spend. It involved the development of a pilot data return which was tested on a sample of HEIs.

Methodology

- 0.4. We reviewed the literature relating to evaluating WP in HE to understand the current evaluation landscape. Based on this understanding, we developed a conceptual framework to understand the relationship between inputs (WP funding), activities and resources (WP interventions) and outputs and outcomes (such as student success measures) that led to impacts for the individual, for the local region and for the economy and society.
- 0.5. A sample of 25 HEIs was selected to participate in the research, representing a broad variety of institution types. The tariff level of institutions and retention rates (both of disadvantaged entrants and overall) were taken into account in the sampling design. Three specialist and further education colleges were also included. 15 institutions in the sample also took part in the sister project to develop a data return.
- 0.6. A draft evaluation framework was developed as a series of logic chains and an indicator bank. This was informed by the literature review and conceptual framework and a regional consultation event held with three of the sample institutions. Primary fieldwork was then conducted with the 25 HEIs and their stakeholders. We conducted institutional visits and follow-up conversations where we explored approaches to WP, how activity is

evaluated and the types of impact that have been achieved at a local and national level. Staff from across institutional functions attended, including senior decision makers, academic staff, planners, and staff from finance, student support and recruitment. Stakeholders included students, employers and local authority representatives.

- 0.7. Alongside the fieldwork, the economists on the project team carried out an econometric analysis of secondary data to explore whether there is a link between the funding input and the outputs of degree success and high level employment. We also reviewed other approaches to evaluating impact from outside the HE sector to inform our findings.

Impact of widening participation

- 0.8. Econometric analysis of secondary data carried out for this project provides further evidence of the return on investment in WP. We found a relationship between the Student Opportunity (SO) funding provided by HEFCE and increased degree attainment, particularly amongst students from more disadvantaged areas. We estimate that each additional £1,000 of SO funding yields economic benefits for graduates in the range of £7,700 and £9,000. This analysis shows that the SO funding is justified on efficiency grounds, with the benefits outweighing the costs.
- 0.9. The econometric analysis only investigated the economic benefits of WP. Our review of the literature shows non-economic benefits of WP for individual students and wider society. HE institutions taking part in the research gave examples of the transformative impact of HE on individual students from disadvantaged backgrounds. Institutions with high numbers of WP students also made a case for the impact that a more diverse student body has in terms of enriching the student experience for all. We collected evidence of the impact of universities and colleges on local economic development, although the specific contribution of WP was not always easy to identify.

Developing an evaluation framework for widening participation

- 0.10. An evaluation framework for widening participation could meet a number of objectives. We identified the following potential objectives for evaluating WP:
- to ensure that central government funding is appropriately spent (**accountability**)
 - to enable an overall assessment of the difference to student and society outcomes that can be attributed to WP funding (**impact assessment**)
 - to demonstrate the value of any impact (**return on investment**)

- to identify differences between institutions' approaches to WP and to see if these differences are associated with differential student outcomes (**benchmarking**)
- to establish the effect of different types of WP interventions (**what works**).

0.11. The final design of an evaluation framework is therefore dependent on the objectives it is aiming to meet. In this report we provide the necessary information, building blocks and recommendations to enable the creation of an evaluation framework according to whichever objectives are considered most important, the resources available and other constraints. If an evaluation framework is to meet all of the objectives identified it must operate in multiple ways to do this, using a wide variety of data sources and information. Considerations for each of the different objectives are now discussed in turn.

0.12. The sister project explored the feasibility of using an enhanced data return to provide greater evidence of the impact of WP. The report concluded that a data return is most effective for ensuring accountability and should continue to be used for this purpose. A data return that collects information to address the other objectives is likely to be resource-intensive and difficult for institutions to complete. It may also affect the types of WP activity delivered, with those activities that are easier to report on seeming more attractive. Other data sources and evaluation methods are better suited to achieving the other objectives. Any additions to the current data return should be proportionate, have a clear purpose, have minimal impact on institutions, remain consistent over time and be implemented with sufficient lead-in time to allow institutions to prepare.

0.13. Assessing the impact of WP interventions is best achieved through carrying out randomised control trials (RCT) , which are seen as the 'gold standard' of impact evaluation methods, or through studies with comparison groups. There are some barriers to carrying these out to evaluate all types of intervention, with established and embedded interventions more difficult to evaluate this way. The case studies developed as part of this work demonstrate the variety of impacts that are achieved through widening participation, many of which are difficult to measure and evaluate using RCTs (see Supplementary case studies published separately). The further away from an initial intervention an impact occurs the harder it is to make a causal link between the two. Some social and economic impacts are therefore more difficult to evidence.

0.14. There is a role in the impact evaluation of WP for other quantitative approaches such as longitudinal cohort studies, supported by qualitative studies. For example, improved access to matched datasets, linking schools information to HE data and employment data could provide further sources of information for carrying out impact assessments and evaluations of what works. The Higher Education Access Tracker (HEAT) is a tool that has been developed by the sector to track individuals from outreach intervention into HE and this is also an important set of data that could be used further to assess the impact of widening participation.

- 0.15. Calculating a return on investment of WP activity can be achieved by carrying out econometric analysis of secondary data. Again, the ability to access and link additional data will enable more of this type of study to take place. However, it is neither possible nor desirable to attach a financial valuation to *all* benefits.
- 0.16. Benchmarking can take place when comparable sets of information are available at a sector and institutional level. The UK Performance Indicators (UK PIs) were seen as a valuable source of information for this purpose and a wider set of outcomes measures could be developed to enable further institutional benchmarking.
- 0.17. Establishing 'what works' (which interventions are most effective) can be achieved through carrying out RCTs, but this method is most appropriate for evaluating new activities or innovations in approach. Again, longitudinal and qualitative approaches provide a useful way of evaluating established and embedded activities.

Recommendations

Recommendation (short term): Maintain the current data collection so that accountability can be assessed.

Recommendation (medium and longer term): Consider the longer-term uses of data returned to HEFCE, in consultation with the sector, so that its uses can be extended. Should additional data be required to better evaluate what works, this needs to be requested in advance of reporting periods with enough lead-in time to enable institutions to put in place suitable systems for data collection (data collection is explored further in the sister project).

Recommendation (short term): HEFCE should continue to support the production of performance indicators for the purposes of benchmarking WP activity.

Recommendation (medium and longer term): HEFCE should consider how the performance indicators or other national datasets could be developed to provide further benchmarking opportunities. The development of an outcomes framework, demonstrating the breadth of outcomes that can be delivered through WP activities and the indicators that can be used to measure these outcomes, should be provided in the medium term to support further benchmarking and monitoring activities.

Recommendation (short term): HEFCE should consider how existing qualitative studies can be collected and their findings synthesised and shared so that best practice is better understood across the sector.

Recommendation (medium and longer term): HEFCE should consider how further studies of this kind can be encouraged through policy and funding decisions.

Recommendation (short term and medium term): HEFCE should continue to encourage and support the use of HEAT or other collaborative individualised tracking tools. They should support the wider use of the data and consider how this data might be pooled and shared for the purposes of sector-level evaluations.

Recommendation (longer term): HEFCE should consider ways of supporting the use of individualised data for evaluating WP and also how best to gather and share this evidence.

Recommendation (short term): Institutions should consider how they might be able to carry out stronger research evaluations of WP interventions (such as RCTs and studies with comparison groups), particularly how they can collaborate with the research community and their network of other institutions and how best to share good practice in this area.

Recommendation (medium and longer term): HEFCE should consider how institutions can be encouraged and supported to carry out these types of evaluations through policy and funding decisions.

Recommendation (medium term): HEFCE should also consider making findings from such evaluations available in an accessible format that allows practitioners to see which approaches are supported by the best evidence.

Recommendation (short term and medium term): HEFCE should consider how datasets can be accessed and analysed by their own analysts, institutions, researchers and economists to provide improved evaluations.

Recommendation (longer term): HEFCE should pursue opportunities to link data from other sources and support its analysis by institutions, researchers and economists so that the impact of WP funding can be better established and return on investment estimated. Institutions should consider their capability to receive and analyse this type of information, the skills available internally and how networks of institutions (or schemes like HEAT) could share expertise, maximise the benefits and grow the evidence base at a sector level.

01. INTRODUCTION

In this chapter we set out the background to this project, its aims and objectives, and the methods used.

Widening participation

- 1.1. Since the publication of the Kennedy¹ and Dearing² reports, the term widening participation (WP) has featured prominently in successive governments' policy initiatives aimed at addressing the under-representation of certain social groups in higher education (HE) including those from lower socio-economic backgrounds and students with disabilities. WP interventions aim to ensure those with the ability to benefit from HE have equal opportunity to participate regardless of background, age, gender, ethnicity or disability by raising aspirations towards HE and removing barriers to progression.
- 1.2. More recently, WP policies have been driven by concerns about social justice, social mobility and the needs of the knowledge economy. Social mobility boosts entrepreneurialism and enterprise resulting in faster technological progress and stronger levels of growth.³ Conversely, low levels of mobility can constrain growth through the misallocation of human resources.⁴ The HE sector plays a key role in helping to improve social mobility by providing a route for individuals to obtain the knowledge and skills necessary to enter high value occupations. This includes widening access to HE to those from lower socio-economic and disadvantaged groups.
- 1.3. HEFCE has developed a commitment to a lifecycle approach to WP, concerned with retention and success outcomes as well as access to HE, ensuring WP students are supported to achieve a good degree and progress successfully into work or further study. This approach has been developed over time and is reiterated in the HEFCE and the Office for Fair Access (OFFA) joint national strategy for access and student success.⁵ As a result,

¹ Kennedy, H. (1997) *Learning Works: Widening Participation in Further Education* Coventry: Further Education Funding Council. Available at: <http://core.ac.uk/download/pdf/9063796.pdf> (Accessed: May 2015)

² Dearing, R. (1997) *Higher Education in the learning society* Leeds: National Committee of Inquiry into Higher Education. Available at: <http://www.leeds.ac.uk/educol/ncihe/> (Accessed: October 2014)

³ Hassler, J. and Rodriguez-Mora, J. (1998) *IQ, Social Mobility and Growth* Institute for International Economic Studies, Stockholm University, Seminar Papers No 635, January

⁴ Murphy K, Scheifer A & Vishny R (1991) The Allocation of Talent: Implications for Growth *Quarterly Journal of Economics* Volume 106(2): 503-530

⁵ HEFCE and OFFA (2014) *National strategy for access and student success in higher education* Department for Business Innovation and Skills https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299689/bis-14-516-national-strategy-for-access-and-student-success.pdf (Accessed: April 2015)

institutions' interventions are increasingly focused throughout the whole student lifecycle; greater emphasis is now placed on improving the retention rates of students considered at risk of non-completion and also on the employability, attainment and progression of WP groups.⁶

- 1.4. Application rates to HE in England remain highly differentiated by social background, although the difference between those living in advantaged and disadvantaged areas is diminishing. In the last 10 years, application rates to HE for young people from all backgrounds have increased, and the largest increase has occurred amongst those from disadvantaged backgrounds.⁷ Between 2004 and 2012, the application rates of young people living in the most disadvantaged areas increased by over 60 per cent,⁸ however, the overall gap between the most advantaged and most disadvantaged remains wide. Students from disadvantaged areas remain under-represented in all institutions apart from those with the lowest tariff entry and students from the top 20 per cent of advantaged areas are seven times more likely to attend the most selective universities than the 40 per cent most disadvantaged.⁹ Once in HE, students from the most disadvantaged areas are, overall, less likely to be retained and succeed than the most advantaged, although this gap is also narrowing, which is perhaps in part explained by the improvements seen in entry qualifications.¹⁰ Retention amongst WP students is now at the same level as their non-WP peers in many, particularly selective, institutions.¹¹

SO Funding

- 1.5. HEFCE allocates funding from the government to universities and colleges. As part of this remit, HEFCE provides funding to support activities to widen participation in HE. The Student Opportunity (SO) allocation for each institution is based on a formula and provides funding to support activities throughout the student lifecycle, from widening access to HE to

⁶ OFFA (2014) *Access agreements for 2015-16: key statistics and analysis* Bristol, UK: Office for Fair Access Available at: <http://www.offa.org.uk/wp-content/uploads/2014/07/Access-agreements-for-2015-16-key-statistics-and-analysis.pdf> (Accessed: October 2014)

⁷ HEFCE (2013) *Trends in young participation in higher education* Bristol, UK: Higher Education Funding Council for England. Available at: http://www.hefce.ac.uk/media/hefce/content/pubs/2013/201328/HEFCE_2013_28.pdf (Accessed: October 2014)

⁸ UCAS Analysis and Research (2012) *How have applications for full-time undergraduate higher education in the UK changed in 2012?* Cheltenham, UK: UCAS. Available at: https://www.ucas.com/sites/default/files/ucas_how_have_applications_changed_in_2012_executive_summary_0.pdf (Accessed: October 2014)

⁹ Independent Reviewer on Social Mobility and Child Poverty (2012) *Fair Access to Professional Careers* London, UK: Cabinet Office Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61090/IR_FairAccess_acc2.pdf (Accessed: October 2014)

¹⁰ UUK (2014) *Trends in Undergraduate Recruitment* London, UK: Universities UK. Available at: <http://www.universitiesuk.ac.uk/highereducation/Documents/2014/TrendsInUndergraduateRecruitment.pdf> (Accessed: 22 April 2015)

¹¹ See the UK Performance Indicators: www.hesa.ac.uk/pis

supporting progression into further study or graduate employment. In 2015-16, HEFCE will allocate £380m under the SO allocation comprising:

- £68m to recognise the extra costs associated with **recruiting and supporting students from disadvantaged backgrounds** currently under-represented in HE
- £20m to widen access and improve provision for **disabled students**
- £278m **improve the retention of students** most at risk of not continuing their studies.

1.6. In addition to the SO allocation, a further £13m has been provisionally allocated by HEFCE to fund National Networks for Collaborative Outreach (NNCO). The funding is provided to networks of universities and colleges to establish a nationally-coordinated approach to help individuals to access HE.

1.7. HE in England has undergone substantial changes over recent years, most notably in relation to the student funding system and the student number controls. From 2015-16 the government has lifted the cap on the number of undergraduate students that English HE institutions can admit. Tuition fees have increased substantially so that a greater proportion of the cost of HE is now borne by the student. In an attempt to ensure that students from low income families were not deterred or prevented from progressing into HE by financial issues, institutions charging fees above the basic level of £6,000 for a full-time undergraduate programme (or above £4,500 per year for a part-time programme) are required to produce an access agreement. These detail fee limits and describe how institutions will use a proportion of their additional fee income (expected to be around 30 per cent of fee income over £6,000 for institutions with low numbers of disadvantaged students) to promote fair access and improve retention and success through financial and non-financial support. A wide range of support has been put in place to help mitigate the impact of the funding reforms on disadvantaged students. This includes bursary and scholarship arrangements such as the National Scholarship Programme (NSP) and changes to the system of loans (such as deferred repayments and an increase in the threshold of earnings required before the loan must be repaid).

Rationale for a WP evaluation framework

- 1.8. During the last three years HEFCE and OFFA have commissioned several pieces of research to develop a better understanding of the impacts of funding for WP on the participation and achievement of under-represented groups. The findings contributed to their joint national strategy for access and student success.¹²
- 1.9. This strategy describes the need for a national evaluation framework, enabling institutions to embed evaluation into their work and better evidence the impact of their activities. A common framework should allow local evidence to be captured and impact understood at an institutional, regional and national level.
- 1.10. There are a number of potential objectives that could be achieved by introducing a national evaluation framework:
- to ensure that central government funding (the SO allocation) is appropriately spent (**accountability**)
 - to enable an overall assessment of the difference to student and society outcomes that can be attributed to WP funding (**impact assessment**)
 - to demonstrate the value of any impact (**return on investment**)
 - to identify differences between institutions' approaches to WP and to see if these differences are associated with differential student outcomes (**benchmarking**)
 - to establish the effect of different types of WP interventions (**what works**).
- 1.11. In the current fiscal climate and the context of ongoing cuts to public expenditure, there is an increasing need to understand the impact of WP funding and the extent to which it offers value for money. In this regard there is a clear need for an evaluation framework that can provide evidence of accountability and a return on investment.
- 1.12. The Higher education outreach to widen participation evaluation toolkit¹³ (a guide developed for WP practitioners) describes evaluation as a reflective opportunity, enabling institutions to consider the impact of their activities and to plan for the future. In order to support this, an evaluation framework should provide institutions with an assessment of

¹² HEFCE and OFFA (2014) *National strategy for access and student success in higher education* Department for Business Innovation and Skills https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299689/bis-14-516-national-strategy-for-access-and-student-success.pdf (Accessed: April 2015)

¹³ International Centre for Guidance Studies at the University of Derby and the Progression Trust (2012) *Higher education outreach to widen participation: toolkits for practitioners* Available at: <https://www.heacademy.ac.uk/sites/default/files/resources/Evaluation%203rd.pdf> (Accessed April 2015)

impact and evidence about what works, in what context and why. Benchmarking information can also help institutions to understand their performance compared to other similar institutions.

- 1.13. The challenges associated with introducing an evaluation framework should not be underestimated. Previous research has shown there are few common approaches to collecting, recording and disseminating data about WP practice and impact at the national level and those national evaluation frameworks that do exist, for example in Australia, Ireland and the USA, appear to be limited to institutional data which varies in quality and may or may not be published and shared with the wider sector or policy makers.¹⁴ Furthermore, impact evaluation is not always possible or feasible. The Magenta Book (the government's evaluation guidance) describes circumstances when impact evaluation is less feasible, including when there is a complex or distant relationship between outcomes of interest and interventions, with lots of confounding factors; when data to support an evaluation is not collected until a policy is already established; and when allocation of resource or intervention is optimally targeted, leaving no equivalent comparison group. Depending on the precise objective, some or all of these may apply to an impact evaluation of WP funding and activity.

Project aims and objectives

- 1.14. This project is one of two related projects that aim to help HEFCE and participating institutions develop a fuller understanding of the impact of work to widen access to and successful participation in HE in England. The specific aim of this in-depth project is to explore how an evaluation framework could improve sector understanding of the relative impacts of a wide range of access and student success activities and spending. In order to achieve this aim, we have:
- **developed an evaluation framework** comprising series of logic chains and an indicator bank to understand the outcomes and impacts of WP activities and spending, covering all stages of the student lifecycle
 - **collected and analysed data from primary and secondary sources** in line with the evaluation framework to explore the relationship between universities and colleges activity and spending and outcomes for students, local and national economies and society more widely

¹⁴ Bowes, L. Thomas, L. Peck, L. and Nathwani, T. (2013) *International research on the Effectiveness of Widening Participation* Bristol, UK: HEFCE and OFFA. Available at: http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/wpinternationalresearch/2013_WPeffectiveness.pdf (Accessed: October 2014).

- **carried out econometric analysis** of secondary data to explore potential associations between funding, student outcomes and benefits for individuals and the exchequer
- **consulted with higher education institutions** (HEIs) on the feasibility of using the evaluation framework as a basis of sector and institutional level evaluation of widening participation.

1.15. In a related piece of work CFE designed and piloted a data return to specifically evidence the impact of the Student Opportunity funding provided by HEFCE. Evidence and findings from the data return project have also informed this in-depth study.¹⁵

Method and report structure

Evidence review

1.16. We undertook a rapid review of evidence to identify the most recent evaluation findings on the impact of WP activities and expenditure. The findings from this review show what is currently known and help illustrate the potential and limitations of current evaluative activity. The evidence review findings informed the development of the evaluation framework and are summarised in Chapter 2.

Developing an evaluation framework

1.17. An initial conceptual framework for understanding the impact of WP was designed as part of the related data return project. Using this as a starting point we developed more detailed logic chains and associated banks of indicators for four aspects of widening participation: widening access, improving retention, student success and supporting disabled students. The thinking behind the development and refinement of the evaluation framework, including summary of feedback from institutions, is covered in Chapter 3. The logic chains and indicator banks are included in Appendix 1.

Fieldwork with HEIs and stakeholders

1.18. We carried out primary fieldwork with 25 HEIs and their stakeholders. We explored effective approaches to evaluating WP activities, consulted on the draft evaluation framework and identified evidence of impact at the local and national level.

1.19. The sample of HEIs taking part in this project included 15 institutions also participating in the related data return project and a further 10 institutions. Institutions were purposively selected to represent the diverse make-up of the sector and the differing levels of funding for widening participation. Five institutions with higher than average entry tariffs

¹⁵ CFE Research (2015) *Student Opportunity outcomes framework research programme: Data return project*. Bristol: HEFCE

participated, along with six average tariff institutions, six lower than average tariff institutions, four specialist institutions and three further education colleges (FECs). The total amount of SO funding allocated to each institution in 2014-15 ranged from just over £100,000 up to just over £8m. FECs were selected based on geography and overall SO allocation received, with institutions receiving less than £100,000 excluded from the sampling. Institutions already known to be tracking and evaluating WP activities were also prioritised in the sampling. Table 1 below summarises the types of institutions sampled.

Table 1: Institution sample showing numbers of institution selected by tariff level and retention rates

Retention	High tariff	Medium tariff	Low tariff	Specialist	FE
Higher than expected for disadvantaged entrants and overall	1	3	1	1	
Higher than expected for disadvantaged entrants but lower overall			1	1	
Higher than expected overall but lower for disadvantaged entrants	1	1			
Lower than expected for disadvantaged retention and overall	2	2	2	2	
As expected	1		2		
No retention data available					4

- 1.20. We carried out a field visit to each participating institution and met with members of staff from key departments with an involvement in widening participation. These included members of staff from finance, marketing and recruitment, as well as registry and student services. The field visits provided an opportunity to consult on the evaluation framework as well as capture qualitative data on the wider impact of the WP funding and activity.
- 1.21. Consultation with wider stakeholders (such as local employers, former students, schools and members of WP partnerships) was carried out by telephone interview.
- 1.22. Views from the participating institutions about the draft evaluation framework and a summary of evidence of impact are presented in Chapter 4.

Econometric analysis

- 1.23. To complement the primary fieldwork, economists from the University of Sussex and University of Sheffield carried out econometric analysis to illustrate how impact can be articulated from data that has already been collected. The results from this analysis are reported in Chapter 5.

Approaches to evaluating impact

- 1.24. To help develop recommended approaches for evaluating the impact and effectiveness of WP we explored a selection of different evaluation approaches used by other sectors. The aim was to glean methods and learning that could be transferred to the HE sector. The results of our review are provided in Chapter 6.

Case studies

- 1.25. Following the primary fieldwork outlined above we developed more detailed case studies focusing on particular aspects of WP and its impact at six different institutions. These case studies bring together quantitative and qualitative data and evidence collected from staff and stakeholders and from other published sources. The case studies are not intended to provide a comprehensive nor representative view of the sector as a whole. The six case studies are collected together and published separately to this report – see Supplementary case studies.

02. EVALUATING WIDENING PARTICIPATION

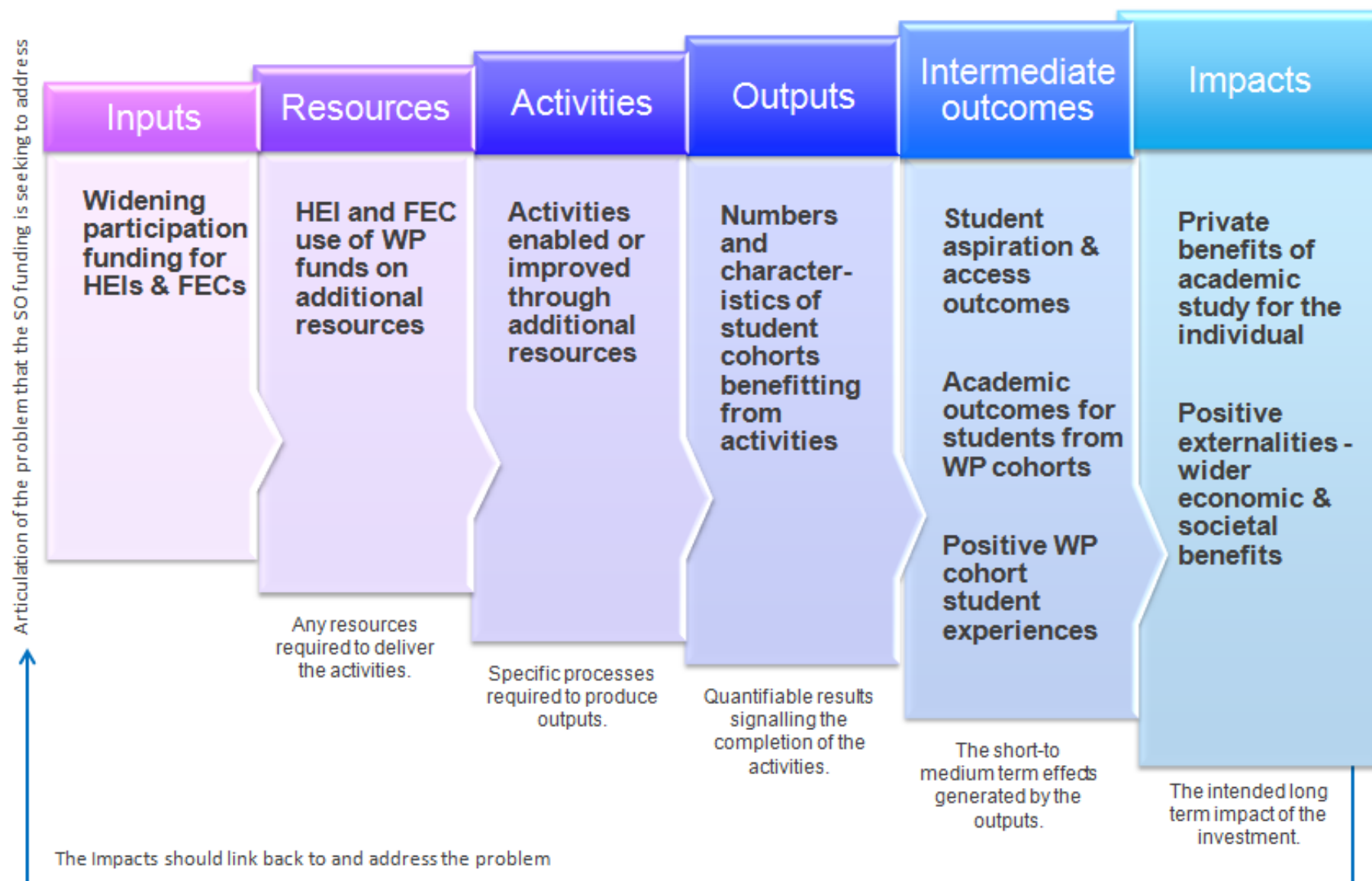
This chapter reviews existing widening participation evaluation research in England and approaches to widening participation evaluation from other countries to inform the design of an evaluation framework.

A conceptual framework

2.1. To guide our work on developing an evaluation framework we began by developing an outline conceptual framework – see Figure 1. The framework identifies the key steps linking WP funding with the intended long term impacts and suggests the types of information needed to evidence each step. The framework incorporates the following elements:

- **Inputs**, such as the Student Opportunity (SO) allocation and OFFA-countable additional fee income
- Additional **resources** funded to deliver WP activities, such as staffing, infrastructure or consumables
- **Activities** enabled or improved through the additional resources
- **Outputs** delivered by these activities, such as the number of target students benefiting
- Intermediate **outcomes** or the short to medium term effects generated by the outcomes, for example progression to HE and academic achievement of WP students
- **Impacts** including the private benefits to individual graduates and positive externalities for wider society and the economy.

Figure 1: Conceptual framework for evaluating widening participation



- 2.2. The framework describes the steps between inputs, outcomes and impacts. Each step is potentially measurable and relationships between inputs and outcomes could be mapped by comparing whether changes in one are associated with any resulting changes in the other.
- 2.3. The conceptual framework was submitted and discussed at a round table event held by HEFCE in August 2014.¹⁶ The event brought together economists and academics with expertise in areas of HE and impact evaluations to discuss and provide advice on conceptualising the impact of WP funding, what data and information should be collected and what other research should be undertaken to evidence the social and economic returns of WP activity.
- 2.4. The conceptual framework informed our initial exploration of the evidence on the effectiveness and impact of WP and literature about evaluative work currently undertaken by the sector. Taking a student lifecycle approach, we explored the evidence of the impact of institutions' activity and expenditure on widening access, and supporting student retention, success and progression. We also considered additional work that takes place to support disabled students. Finally, we considered the evidence available that demonstrates the impacts of WP spending on the individual, the economy and society. The aim of our review was to determine what evidence currently exists, the quality of that evidence and the implications for the design of an evaluation framework.

Improving participation of disadvantaged students

- 2.5. A major focus of WP strategies is to address under-representation by widening access to HE for disadvantaged groups, including lower socio-economic groups. Participation amongst low socio-economic groups currently stands at around 17 percent in England, compared to 47 percent for students from higher socio-economic classes.¹⁷ Much research has been carried out attempting to understand what can be done effectively to close this gap.

Evidence of what works

- 2.6. A wide range of personal, socio-economic and cultural factors influence whether an individual will progress to HE, but prior educational attainment has been shown to be a key predictor of participation and helps to explain the much of difference in participation

¹⁶ Members of the research team in attendance were: Dr Abigail Diamond (CFE), Rachel Moreton (CFE), Prof Liz Thomas (CFE Associate), Prof Nicholas Barr (LSE), Dr Gill Wyness (LSE) and Prof Peter Davies (University of Birmingham). HEFCE staff in attendance were: Prof Madeleine Atkins, Dr Mark Gittoes, Sarah Howls, Christopher Millward (Chair), Richard Smith and David Sweeney. Other attendees were: Dr Gavan Conlon (London Economics), Dr Claire Crawford (IFS), and Graeme Harrison (Oxford Economics).

¹⁷ UCAS Analysis and Research (2013) *2013 Application Cycle: End of Cycle Report*. Cheltenham, UK: UCAS. Available at: <http://www.ucas.com/sites/default/files/ucas-2013-end-of-cycle-report.pdf> (Accessed: October 2014).

between different groups. HEFCE's analysis of gaps in participation demonstrates variations in participation by area even after accounting for pupil attainment.¹⁸ There are a number of highly influential pieces of economic research that point to the importance of improving the prior academic attainment of pupils (rather than focusing resources at later stages when individuals have already taken crucial exams) as a way of improving participation at university. For example, Chowdry et al¹⁹ used linked administrative data (linking school results to HE participation) to show that the disparity in participation between socio-economic groups is driven by the poor performance of low income students in GCSE and A level exams and does not emerge at the point of entry into HE. This kind of evidence has led to an increasing number of WP interventions focused on increasing student attainment in school.

- 2.7. There is some evidence from initiative-level studies that the provision of information to potential students about the benefits of HE study can have an impact on levels of awareness, aspirations and ultimately participation in HE.
- 2.8. McGuigan, McNally and Wyness²⁰ undertook research to explore the information young people receive about HE and the impact of improving that information on decision-making. They studied year 10 pupils' awareness of the costs and benefits of educational decisions. By using a RCT they analysed the impact of providing GCSE year pupils with more information about university (with an emphasis on the economic costs and benefits). Though they could not track students to see whether they actually progressed onto FE or HE, they found robust evidence that students' knowledge had improved, and a significant increase in students self-reporting that they would stay on in full time education after age 16.
- 2.9. Anglia Ruskin University operates a summer road-show which is targeted at Year 12 and 13 pupils, Level 3 students, Access to HE learners, parents and school staff, as well as members of the public. Similar to the McGuigan, McNally and Wyness study, the project, which began in 2011, following the introduction of increased fees, focused on the provision of information to prospective students to ensure they were not deterred from applying to HE by the headline tuition fee. Over a six week period in June and July 2013 the road-show reached 29 schools and colleges, 2,250 students and 250 parents and received 33 mentions in newspapers and online articles. Students were reported to have demonstrated a measurable growth in knowledge of HE and student finance. However, it is not possible to

¹⁸ Further information available here: <http://www.hefce.ac.uk/analysis/yp/gaps/> (Accessed: May 2015)

¹⁹ Chowdry, H. Crawford, C. Dearden, L. Goodman, A. and Vignoles, A. (2013) *Widening participation in higher education: analysis using linked administrative data*. Journal of the Royal Statistical Society: Series A (Statistics in Society).

²⁰ McGuigan, M., McNally, S. and Wyness, G. (2012) *Student Awareness of Costs and Benefits of Educational Decisions: Effects of an Information Campaign* London, UK: Centre for Economic Performance, London School of Economics and Political Science Available at: <http://cee.lse.ac.uk/ceedps/ceedp139.pdf> (Accessed: September 2014).

determine whether there was a corresponding increase in applications to HE from participants as a result of the interventions.²¹

- 2.10. Moore, Sanders and Higham²² report that certain types of intensive interventions, such as summer schools and mentoring, are particularly effective at widening access, particularly if trained HE students are involved in the delivery. The wider benefit of involving students is that they add to the institution's capacity to deliver outreach, significantly enhancing their capability to meet their WP objectives. They conclude that in order to successfully widen access to HE, interventions need to start early and engage young people at different stages of the student lifecycle.
- 2.11. Hoare and Mann²³ observed the impact of the Sutton Trust Summer School programme, which aims to improve the likelihood of disadvantaged students attending university. They compared students who attended a Sutton Trust Summer School to a group of control students (comprising students who applied for a Summer School place unsuccessfully, or who were eligible but never applied). By using this methodology they avoid potential biases caused by comparing Summer School students to those who are not eligible and/or who may have very different initial levels of awareness or aspiration. Their results indicate an increase in university applications and registrations from Summer School attendees, particularly to elite institutions.
- 2.12. There is wide-spread agreement in the UK and internationally that widening access strategies are most effective when they deliver a consistent and sustained interventions as part of a coherent 'framework'. Gale and Parker²⁴ argue, for example, that it is important for a programme of activities to combine a number of features, rather than relying on one approach. Synthesising the evidence from their international review, they created a matrix to inform the design and evaluation of outreach activities to maximise impact. The study identified 10 characteristics that are typical of effective programmes, which are organised in four programme strategies, as shown in Table 2.

²¹ Morris, K. and Atherton, G. (2013) *Student Opportunity Funding: Why it Counts* London, UK: million+.

²² Moore, J., Sanders, J. and Higham, L. (2013) *Literature review of research into widening participation to higher education*. Bristol, UK: Higher Education Funding Council for England. Available at: <http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/literaturereviewofwptothe/Literature%20review%20of%20research%20into%20WP%20to%20HE.pdf> (Accessed: October 2014).

²³ Hoare, T. and Mann, R. (2011) *The impact of the Sutton Trust's Summer Schools on subsequent higher education participation: a report to the Sutton Trust*. Bristol, UK: University of Bristol, Widening Participation Research Cluster. Available at: <http://www.suttontrust.com/wp-content/uploads/2012/01/full-summer-school-report-final-draft.pdf> (Accessed: October 2014).

²⁴ Gale, T. and Parker, S. (2013) *Widening Participation in Australian Higher Education*. Bristol, UK: HEFCE and OFFA. Available at: http://www.ncsehe.edu.au/wp-content/uploads/2013/10/2013_WPeffectivenessAus.pdf (Accessed: October 2014).

Table 2: Four strategies and 10 characteristics of outreach programmes

Assembling resources	Engaging learners	Working together	Building confidence
People-rich	Recognition of Difference	Collaboration	Communication and information
Financial support and/or incentives	Enhanced academic curriculum	Cohort-based	Familiarisation/site experiences
Early, long-term, Sustained	Research-driven		

2.13. The characteristics associated with each strategy can be grouped into common themes:

- **Assembling resources** involves committing human resources (people-rich), financial resources (financial support and/or incentives) and time resources (early, long term, sustained) to support and implement outreach programmes and activities.
- **Engaging learners** involves learning and teaching of various orders: learning about programmes, their effects and intervention strategies more generally (research-driven), high quality and rigorous student learning driven by quality teaching (enhanced academic curriculum), and learning from and valuing the knowledge of others (recognition of difference).
- **Working together** involves cooperation and partnership at the level of program design and implementation (collaboration) and in terms of engaging student communities through programmes, rather than just targeting individuals (cohort-based).
- **Building confidence** involves strengthening students' awareness of university structures, pathways and opportunities (communication and information) and increasing students' familiarity with university contexts and lifestyles (familiarisation and/or site experiences) in order to promote the view that access to and participation in HE is for everybody.

2.14. Programme composition is assessed in terms of the balance between the total number of program characteristics (depth) and the number of programme strategies from which they are drawn (breadth). For example, a programme that combined financial support (assembling resources), enhanced academic curriculum (engaging learners), collaboration (working together) and familiarisation/site experiences (building confidence) would be stronger than a programme that combined financial support (assembling resources), people-rich (assembling resources), communication and information (building confidence) and familiarisation/site experiences (building confidence). The first example has four characteristics drawn from across each of the four strategies, while the second combines four characteristics drawn from just two strategies.

Implications for an evaluation framework

- 2.15. The literature relating to widening access and participation demonstrates the importance of being able to record the interventions students receive and track whether students then progress to HE. This could be achieved by better use of existing datasets and linking these to measure participation. Additional evidence can be generated in this way about the overall impact of activities and the return on investment of funding.
- 2.1. There are examples in the literature of studies that use comparison groups and RCTs taking place to track and monitor the effectiveness of widening access activities. RCTs are seen as the ‘gold standard’ for demonstrating impact in research²⁵ and are possible given the targeted nature of the activities that they are monitoring, given that it is possible to set up control groups (individuals not participating in the activity) for comparison. However, much evaluation of outreach activities does not include comparator groups. It is therefore difficult to attribute any impacts achieved to the interventions being evaluated.
- 2.16. The evidence suggests that frameworks or programmes of activity are more effective than individual, targeted activities. The more complex frameworks of activities are also more complex to evaluate, given their multi-layered and longitudinal design. This suggests a wide range of evaluation tools including qualitative studies capturing the contextual factors that impact on WP activities should also be considered.

Improving retention, degree success and progression

- 2.17. Emphasis is placed on the importance of improving the retention and success of disadvantaged groups who enter HE in addition to widening access. There are a range of approaches in operation within HEIs that seek to improve retention and degree success, some of which are funded in part by the SO allocation. It is an area of increasing academic scrutiny, with research being targeted at identifying the groups that are most vulnerable to dropout and interventions designed to close the gap in attainment between disadvantaged students and their peers.

Gaps in retention and success

- 2.18. HEFCE have carried out longitudinal analyses of non-continuation and transfer rates of entrants to HE between 2003-04 and 2011-12, split by student and course

²⁵ Haynes, L. Service, O. Goldacre, B. And Torgerson, D. (2012) *Test, Learn, Adapt: Developing Public Policy with Randomised Control Trials*. London, UK: Cabinet Office Behavioural Insights Team. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/62529/TLA-1906126.pdf (Accessed: April 2014).

characteristics.²⁶ The analysis shows that entrants from areas with low participation in HE were less likely to be retained than entrants from high participation areas.

- 2.19. Chen²⁷ reports that internal spending – that is, how much money is spent on student support in relation to other areas – has an impact on study success along with the degree of selectivity of the institution, the composition of faculty staff (including the student/staff ratio) and the composition and characteristics of the student body at the institution, including socio-economic status, gender and ethnicity.

Individual characteristics

- 2.20. HEFCE have published research into the entry levels and progression of students by ethnicity²⁸ and research on differential degree outcomes²⁹ and employment circumstances³⁰ by multiple student characteristics. The research shows that there is significant variation in degree outcomes for students from different ethnicities and that minority ethnic entrants are concentrated in a smaller number of institutions compared with White entrants, who are distributed more evenly across the sector. Furthermore, students from disadvantaged areas tend to do less well than those with the same prior educational attainment from more advantaged areas.
- 2.21. Socio-economic factors are significant determinants of retention and success.³¹ Johnes and McNabb³² used individual-level UCAS data and statistical techniques to study student dropout. They found that the dropout rate was highest for students from families where parents are employed in semi-skilled or unskilled occupations. Students whose parents work in manual occupations are also the most likely to fail their degrees.
- 2.22. Analysis by gender³³ reveals that more females than males complete their degrees but when women do drop out, they report different reasons for doing so than men. Females

²⁶ See here for further information: <http://www.hefce.ac.uk/analysis/ncr/> (Accessed: May 2015)

²⁷ Chen, R. (2012) *Institutional Characteristics and College Student Dropout Risks: A Multilevel Event History Analysis*. Research in Higher Education, 53(5),

²⁸ HEFCE (2010) *Student ethnicity: profile and progression of entrants to full time, first degree study* Higher Education Funding Council for England. Available at: http://www.hefce.ac.uk/media/hefce1/pubs/hefce/2010/1013/10_13.pdf (Accessed: May 2015)

²⁹ HEFCE (2014) *Differences in degree outcomes: key findings* Higher Education Funding Council for England. Available at: http://www.hefce.ac.uk/media/hefce/content/pubs/2014/201403/HEFCE2014_03.pdf (Accessed: May 2015)

³⁰ HEFCE (2013) *Higher education and beyond* Higher Education Funding Council for England Available at: <http://www.hefce.ac.uk/media/hefce/content/pubs/2013/201315/Higher%20education%20and%20beyond%20Outcomes%20from%20full-time%20first%20degree%20study.pdf> (Accessed: May 2015)

³¹ Quinn, J. (2013) *Drop-out and completion in Higher Education in Europe among students from under-represented groups* Plymouth, UK: European Commission. Available at: <http://www.nesetweb.eu/sites/default/files/HE%20Drop%20out%20AR%20Final.pdf> (Accessed: October 2014).

³² Johnes, G. and McNabb, R. (2004) *Never Give up on the Good Times: Student Attrition in the UK*. Oxford Bulletin of Economics and Statistics, 66(1)

³³ Ibid.

more often report reasons such as lack of interest or motivation for the study programme, while males indicate a lack of aptitude and capabilities to follow the programme. For males the moral support provided by their families plays an important role in successfully completing their study programme, in particular when they are following female dominated programmes.

- 2.23. Connor et al.³⁴ found that although a higher proportion of minority ethnic groups participate in HE compared with white students, they do not perform as well in terms of degree classification. This was mirrored in the findings of HEFCE's research. Further research suggests that gender interacts with other individual characteristics like ethnic background and socio-economic status to influence retention and degree success (Reason³⁵ and Reisel and Brekke³⁶). However, it is not possible to establish a clear **causal** link between these three factors and study success or drop-out.

Preparation for HE

- 2.24. The level of preparedness of students for HE and the impact this has on retention and success has been given much attention in the student retention literature and is thought to be a key indicator of early withdrawal, along with prior educational attainment. International studies have revealed that students who were low achievers in school are more likely to drop out of their study programme.^{37,38} An individual's motivation to study is also an important factor in retention. In Finland for example, it was found that students who were committed to the content of the study programme, its academic culture, the more instrumental aspects of their study programme and also to their career interests, were more likely to complete their study programme than students who only had low commitment to the programme or career interests.³⁹ Similarly, a Norwegian study found that students who have high interests in the study programme and/or in later careers were more likely to remain in the same institution and not to transfer to a different institution.⁴⁰

³⁴ Connor, H. Tyers, C. Modood, T. and Hillage, J. (2004) *Why the Difference? A Closer Look at Higher Education Minority Ethnic Students and Graduates* London, UK: Department for Education and Skills. Available at: <http://www.bristol.ac.uk/ethnicity/documents/educationreport.pdf> (Accessed: October 2014)

³⁵ Reason, R. D. (2009) *An Examination of Persistence Research Through the Lens of a Comprehensive Conceptual Framework*. Journal of College Student Development, 50(6)

³⁶ Reisel, L. and Brekke, I. (2010) *Minority Dropout in Higher Education: A Comparison of the United States and Norway Using Competing Risk Event History Analysis*. European Sociological Review, 26(6)

³⁷ Lassibille, G. and Gomez, L. N. (2007) *Why do higher education students drop out? Evidence from Spain* Education Economics, 16(1)

³⁸ Heublein, U. Spangenberg, H. and Sommer, D. (2003) *Ursachen des Studienabbruchs: Analyse 2002*. HIS: Forum Hochschule.

³⁹ Mäkinen, J. Olkinuora, E. and Lonka, K. (2004) *Students at risk: Students' general study orientations and abandoning/prolonging the course of studies*. Higher Education, 48(2)

⁴⁰ Hovdhaugen, E. (2009) *Transfer and dropout: different forms of student departure in Norway*. Studies in Higher Education, 34(1)

2.25. A number of these studies found that ensuring students have the right information and realistic expectations about the study programme contributes to retention and study success and that unmet expectations lead to drop-out. Much of the literature identifies the need to improve the match between the student and his or her study programme. Research from Austria⁴¹, Germany⁴², the Netherlands⁴³, Switzerland⁴⁴ and the UK⁴⁵ points to the need to improve the process of decision-making and study choices to reduce the number of incorrect choices and improve the match between student and study programme. In the Netherlands Warps et al⁴⁶ found a high correlation between late applications (within one or two months of starting a degree programme) and the low extent to which students feel connected to a study programme and their own perceived likelihood of graduation.

2.26. Much of the research on improving student completion and success discussed here focuses on the role of the institution, rather than the individual learner. Ensuring that students have access to appropriate information to make informed choices about HE and have realistic expectations of the institution, the programme and the demands it will place on them are all important factors. So too are the level of institutional commitment to WP, the level of social integration, the approach to learning, teaching and assessment and the extent of student tracking and monitoring. These are discussed in turn in the following paragraphs.

Commitment and strategy

2.27. Yorke and Longden⁴⁷ found that rates of retention and success improved when institutions fully committed themselves to addressing this issue. Dutch research⁴⁸ identified that institutions that are successful in retaining students have strong management boards which support a culture that actively examines teaching policies and supports the

⁴¹ Unger, M. Wroblewski, A. Latcheva, R. Zaussinger, S. Hofmann, J. and Musik, C. (2009) *Frühe Studienabbrüche an Universitäten in Österreich* Vienna, Austria: Institute for Advanced Studies. Available at: http://bmwf.gv.at/uploads/tx_contentbox/Frueher_Studienabbruch_an_Universitaeten_in_OEsterreich.pdf (Accessed: November 2014)

⁴² Heublein, U. Richter, J. Schmelzer, R. and Sommer, D. (2012) *Die Entwicklung der Schwund- und Studienabbruchquoten an den deutschen Hochschulen* HIS: Forum Hochschule

⁴³ Meeuwisse, M. Severiens, S. E. and Born, M. P. (2009) *Reasons for withdrawal from higher vocational education A comparison of ethnic minority and majority non-completers* Studies in Higher Education, 35(1)

⁴⁴ Wolter, S. C. Diem, A. and Messer, D. (2014) *Drop-outs from Swiss Universities: an empirical analysis of data on all students between 1975 and 2008* European Journal of Education, 49(4)

⁴⁵ Lewis, M. and Castley, A. (2008) *Factors affecting student progression and achievement: prediction and intervention A two-year study* Innovations in Education and Teaching International, 45(4)

⁴⁶ Warps, J. Wartenbergh, F. Hogeling, L. Pass, J. Kurver, B. and Muskens, M. (2010) *Een goede start in bètatechniek Studiekeuze, studietoetsen en studieuitval in hoger bètatechnisch onderwijs* Den Haag: Platform BètaTechniek/ResearchNed

⁴⁷ Yorke, M. and Longden, B. (2004) *Retention and Student Success In Higher Education* McGraw-Hill International

⁴⁸ van het Onderwijs, Inspectie (2009) *'Onbelemmerd studeren.' Beleid en voorzieningen voor studenten met een functiebeperking in het hoger onderwijs*

professionalisation of teachers, small-scale teaching, close supervision and advice and support for students.

Social integration

2.28. Creating a culture of belonging and being committed to the needs of the student body at an institutional level is at the heart of successful retention and success for all students.^{49,50} This is most effectively nurtured through mainstream activities that all students participate in. The academic sphere was shown to be the most important for nurturing participation of the type which engenders a sense of belonging, and thus academic programmes and high-quality, student-centred learning and teaching are a primary focus for effective student retention and success. Analysis of effective approaches to improving retention and success demonstrates that student belonging is achieved through supportive peer relations, meaningful interaction between staff and students, developing knowledge, confidence and identity as successful HE learners and an HE experience relevant to students' interests and future goals.

2.29. The social integration of the student with their peers also has an influence on study success.⁵¹ This finding is echoed in research in other countries such as Germany⁵² and Norway.⁵³ Student support services also have an impact on student completion and success. Student support services include a number of different activities like pre-entry preparation, study skills development, pastoral support, counselling, financial planning and budgeting skills, health services, disability support and career guidance. To date, the contribution of this wide range of student support services to study success is relatively under-researched and poorly documented. Nonetheless, some evidence on the effect of student support services suggests that support should be targeted, for example by discipline or by student group.⁵⁴ Other authors claim that support should be integrated into the curriculum.^{55,56} Woodfield and Thomas⁵⁷ found that many students were unaware of

⁴⁹ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

⁵⁰ Tinto, V. (1975) *Dropout from Higher Education: A Theoretical Synthesis of Recent Research* Review of Educational Research, 45(1)

⁵¹ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

⁵² Georg, W. (2009) *Individual and institutional factors in the tendency to drop out of higher education: a multilevel analysis using data from the Konstanz Student Survey* Studies in Higher Education, 34(6)

⁵³ Hovdhaugen, E. Frølich, N. and Aamodt, P. O. (2013) *Informing Institutional Management: institutional strategies and student retention* European Journal of Education, 48(1).

⁵⁴ Sellers, J. and Van der Velden, G. (2003) *Supporting Student Retention* LTSN Generic Centre.

⁵⁵ Powney, J. (2002) *Successful student diversity: Case studies of practice in learning and teaching and widening participation*. Bristol, UK: HEFCE

⁵⁶ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

centralised and generic student support, or if they were chose not to use it, particularly those students who would benefit the most.

The academic experience

- 2.30. Evidence from across Europe and also Australia and the US all points to the importance of learning, teaching and assessment within academic programmes (see for example Thomas⁵⁸ and Georg⁵⁹. A German study⁶⁰ of the views of students who were considering withdrawing or changing their study programme found that most of the reasons for this decision were linked to the academic experience. In particular, students wanted more intensive supervision by and feedback from teaching staff, greater academic preparation through pre-entry and freshman preparatory courses, and changes to the assessment process. This connects to the broader point made by Holmegaard, Uriksen and Madsen⁶¹ that not only is pedagogy important, but so too is the culture of the institution. In particular, the focus should not be on identifying and rectifying student deficit, but rather on the culture and values of the faculty. This perspective is developed in work examining inclusive learning, teaching and assessment.⁶²
- 2.31. Many student-centred and active learning approaches give priority to the role of students in their own learning. Indeed there is a growing body of evidence that emphasises the importance of student involvement or engagement (for example, Krause⁶³, Thomas⁶⁴). This is most effectively achieved through student-centred active learning approaches, coupled with assessment practices which are formative rather than merely summative, allowing students to engage more fully with academics throughout their studies.

⁵⁷ Woodfield, R. and Thomas, L. (2012) *Male students: engagement with academic and pastoral support services* London, UK: Equality Challenge Unit. Available at: <http://www.ecu.ac.uk/publications/male-students-engagement-with-academic-and-pastoral-support-services> (Accessed: 3 November 2014)

⁵⁸ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

⁵⁹ Georg, W. (2009) *Individual and institutional factors in the tendency to drop out of higher education: a multilevel analysis using data from the Konstanz Student Survey* Studies in Higher Education, 34(6)

⁶⁰ Bargel, T. Ramm, M. and Multus, F. (2012) *Schwierigkeiten und Belastungen im Bachelorstudium—wie berechtigt sind die studentischen Klagen* (Beiträge zur Hochschulforschung), pp. 26–41

⁶¹ Holmegaard, H. T. Uriksen, L. and Madsen, L. M. (2010) *Why students choose (not) to study engineering* IGIP-SEFI Available at: <http://www.sefi.be/wp-content/papers2010/abstracts/203.pdf> (Accessed: April 2015)

⁶² Hockings, C. (2010) *Inclusive learning and teaching in higher education: a synthesis of research* York, UK: Higher Education Academy. Available at: https://www.heacademy.ac.uk/sites/default/files/inclusive_teaching_and_learning_in_he_1.doc (Accessed: October 2014)

⁶³ Krause, K.-L. D. (2011) 'Transforming the learning experience to engage students', in Thomas, L. and Tight, M. (eds) *Institutional transformation to engage a diverse student body*. Bingley, U.K.: Emerald, pp. 199–212

⁶⁴ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

Monitoring and tracking

- 2.32. Effective student completion and success strategies include the tracking and monitoring of students. This is intended to reduce the number of students who drift away, especially in their first year.⁶⁵ Tracking students provides the institutions with the chance to detect at an early stage students that have a high risk for dropping out. Buglear⁶⁶ found that one reason institutions do not intervene adequately to improve retention is poor data. This includes data about which students are at risk of withdrawing, evidence about which approaches are effective and real-time data that allows timely and effective interventions.

Supporting progression

- 2.33. As well as focussing on participation and success in their studies, some WP schemes aim to support learners in their progression to further study or employment. Pennington, Mosley and Sinclair⁶⁷ analysed surveys of graduates and employers conducted from November to December 2012 and January 2013. They uncovered a mismatch between the emphasis that many larger employers place on graduate mobility and the willingness of many graduates, particularly non-advantaged graduates, to move in pursuit of a graduate job. They also found that students from disadvantaged backgrounds, who have more to gain, were disproportionately disinterested in careers service advice. Disadvantaged students appear to be less likely to take advantage of the opportunities to engage with employers at employer-led events on campus, despite being aware of the potential benefits of networking.

Implications for an evaluation framework

- 2.34. Moore, Sanders and Higham⁶⁸ conclude that the issues underlying student withdrawal are complex and often interlinked: academic issues, feelings of isolation or not fitting in and worries about achieving future aspirations are highlighted in the research. But their conclusions echo Thomas⁶⁹, that fostering a sense of belonging lies at the heart of retention and success. The prime site for nurturing engagement and a strong sense of belonging is located in the academic domain. The attitudes, approaches and methods of

⁶⁵ Quinn, J. (2013) *Drop-out and completion in Higher Education in Europe among students from under-represented groups*. Plymouth, UK: European Commission. Available at: <http://www.nesetweb.eu/sites/default/files/HE%20Drop%20out%20AR%20Final.pdf> (Accessed: October 2014).

⁶⁶ Buglear, J. (2009) *Logging in and dropping out: exploring student non-completion in higher education using electronic footprint analysis*. *Journal of Further and Higher Education*, 33(4).

⁶⁷ Pennington, M., Mosley, E. and Sinclair, R. (2013) *AGCAS/AGR Graduate Success Project: an investigation of graduate transitions, social mobility and the HEAR*. London, UK: Department of Business, Innovation and Skills. Available at: <http://www.agcas.org.uk/assets/download?file=3960&parent=1519> (Accessed: 6 October 2014).

⁶⁸ Moore, J., Sanders, J. and Higham, L. (2013) *Literature review of research into widening participation to higher education*. Bristol, UK: Higher Education Funding Council for England. Available at: <http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/literaturereviewofwpttohe/Literature%20review%20of%20research%20into%20WP%20to%20HE.pdf> (Accessed: October 2014).

⁶⁹ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

academic staff have a key role to play, as do developments in learning, teaching and assessment. They go on to note that different groups may experience HE in very different ways, which can impact in particular ways on students' identity and the extent to which they fit in and belong. There are distinct challenges involved in engaging specific groups such as mature students and part-time learners.

2.35. The social capital of students, their sense of belonging and identity are difficult concepts to monitor and evaluate quantitatively, demonstrating the value of using a wide range of tools to evaluate the success of different interventions. In particular, qualitative research exploring these concepts would be advisable. Alternative student surveys, such as the Higher Education Academy UK engagement survey,⁷⁰ provide information on the levels of engagement of students and allow for benchmarking against other institutions; however, the UK engagement survey is an opt-in resource and so national data is not available.

2.36. The evidence suggests that retention and success are best addressed by:

- approaches which seek to develop supportive peer relations
- meaningful interaction between staff and students
- knowledge, confidence and identity as successful HE learners
- and an HE experience that is relevant to students' interests and future goals.⁷¹

Key transition points require particular attention. Transition activities should be seen as part of a continuum that includes pre-entry activities and first year engagement. Generic features of successful pre-entry interventions include: providing information; informing expectations; developing academic skills; building social capital; and nurturing a sense of belonging. Universal rather than targeted approaches are the preferred model in most retention and success (including attainment) strategies. Although specific interventions like peer mentoring and peer tutoring have been shown to be particularly effective, the precise activity is less important than the way in which it is offered and linked to other endeavours.

2.37. Integrated, rather than targeted approaches to WP that are aimed at whole cohorts of students need evaluation models that can take into account the magnitude and reach of the intervention. There are likely to be local differences in delivery models making benchmarking difficult, given the close link between integrated activities and learning and

⁷⁰ <https://www.heacademy.ac.uk/consultancy-services/surveys/ukes>

⁷¹ Thomas, L. (2012). *Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What works? Student Retention & Success programme* Higher Education Academy, York, UK

teaching and other institutional-specific strategies; this will also need to be taken into account in the design of any sector-wide data return or evaluation model.

Improving provision for disabled students

- 2.38. The SO allocation recognises the additional support needs of students with disabilities, with a stream of funding allocated for that purpose. Disabled students have benefitted over recent decades from inclusive policies generally. Efforts to widen participation in HE and improve retention, as set out earlier in this report, also benefit disabled students. However, empirical research has shown these students are particularly vulnerable to dropout and are likely to have poorer degree outcomes. The Organisation for Economic Co-operation and Development (OECD)⁷² highlights that disabled students may find transition into HE more difficult and that pathways are often less straightforward, often involving breaks in study and changes in direction during study.
- 2.39. Fuller et al⁷³ studied dropout and success amongst disabled students. Their analysis of the survey-based study revealed that disabled students, particularly those with mental health difficulties, were particularly vulnerable to stress and academic failure at points such as the beginning of a new course or the start of an exam period and that their degree outcomes were generally poorer than non-disabled students' outcomes. This is in line with earlier findings in the US made by the National Center for Education Statistics, based on longitudinal surveys, which estimated that disabled students enrolled in post-secondary education in 1989-1990 were more likely than their non-disabled counterparts to have a lower rate of persistence and degree attainment in HE – within five years, 54 per cent of them had earned a degree against 64 per cent for their non-disabled counterparts.⁷⁴ This study also found that post-secondary institutions in the US that welcomed disabled students tended to structure their practice around formal transition plans.
- 2.40. Hanafin et al.⁷⁵ conducted a small-scale qualitative Irish study examining the experiences of two groups of young people with physical disabilities and with dyslexia in two HEIs. They showed that the use of assistive technology and the degree of adaptation of the physical environment have particularly important effects on exam performance for disabled students.

⁷² OECD (2011). *Inclusion of Students with Disabilities in Tertiary Education and Employment*, Education and Training Policy. OECD Publishing.

⁷³ Fuller (2008) *Disabled students in higher education: Experiences and outcomes* TLRP/ESRC London, UK

⁷⁴ Horn, L.J., Berkold, J. (1999). *Students with Disabilities in Postsecondary Education: A profile of Preparation, Participation and Outcomes* National Center for Education Statistics, Washington DC, USA

⁷⁵ Hanafin, J. Shevlin, M. Kenny, M. and Neela, E.M. (2007) *Including young people with disabilities: Assessment challenges in higher education* Higher Education 54, 435–448. doi:10.1007/s10734-006-9005-9

2.41. Bath Spa University funded their Early Induction Programme for Disabled Students from their SO allocation. The programme aims to help disabled students who may be unsure about the support they are entitled to and who feel anxious about the transition to university, by helping them to settle in, orientate themselves and feel part of the student body. Peer Mentors help with the moving-in process, encouraging participants to take part in a range of motivational and social activities. The Early Induction Programme is evaluated each year. Since 2007-08 there has been a continuing trend of improvement in the retention and success of students who have disclosed a disability or specific learning difficulty and in the percentage who achieve First or Upper Second Class honours at Bath Spa University.⁷⁶

Implications for an evaluation framework

2.42. Disabled students as a cohort do receive some targeted support that allows for the evaluation of discrete activities, as demonstrated in the studies discussed above. As the Bath Spa University study demonstrates, the ability to track and monitor students that have disclosed disabilities is possible throughout the student journey and correlations can be made between the activities and resources put in place and measurable outcomes observed.

Economic impacts and positive externalities

Public and private returns from HE

2.43. The OECD's annual Education at a glance report for 2014⁷⁷ found both individual and public returns from participation and investment in tertiary education. Tertiary graduates earned more and had lower unemployment rates than non-graduates. Tertiary education graduates across the OECD earn on average 70 per cent more than the non-tertiary educated, meaning despite rising costs of HE in England the investment is still worthwhile. 80 per cent of tertiary education graduates were employed compared to 60 per cent of those with below upper secondary education on average across the OECD.

2.44. Furthermore, the public received a positive return on investment through taxes and social contributions. The public net return on investment was on average over US\$105,000 per tertiary educated man, about three times the level of average public investment, and \$60,000 for women. The private rate of return for men is 18.2 per cent and 6.7 per cent for women, while the public rate of return is 26.1 per cent for men and 36.4 per cent for women.⁷⁸ Therefore, as the cost of HE is increasingly transferred to students in England, so the public rate of return is increasing, and is much greater than the OECD or European

⁷⁶ Morris, K. and Atherton, G. (2013) *Student Opportunity Funding: Why it Counts* London, UK: million+

⁷⁷ OECD (2014). *Education at a Glance 2014* Organisation for Economic Co-operation and Development Paris

⁷⁸ Ibid, tables A7.1a, A7.1b, A7.4a, and A7.4b.

Union (EU) averages. The study also found that there are health, volunteering, inter-personal trust and political engagement benefits associated with participation in tertiary education.⁷⁹

2.45. Given the personal, economic and social benefits of tertiary education across the OECD in general and in the UK in particular it is important to consider who is benefitting from tertiary education:

- There has been a steady growth in tertiary education attainment across all ages in the UK, putting us above the OECD and EU averages.⁸⁰ However, the UK is still below the OECD and EU average for the average number of years in education.
- 41 per cent of 20-34 year olds whose parents have upper secondary or post-secondary non-tertiary education are in tertiary education. This is an indicator of social mobility, and the UK is above the average for the OECD (which is 37%).⁸¹
- However, the likelihood of participation in tertiary education is still affected by the educational background of parents, with individuals more likely to participate if their parents have tertiary education.

2.46. The OECD data shows that the UK in general, and England in particular where specific data is available, compares reasonably well with the OECD and European averages both in terms of private and public benefits of participation in HE, as well as who benefits from HE and the contribution this makes to social mobility. However, it should be noted that whilst some gaps in participation are narrowing, some groups continue to be under-represented, particularly in some high tariff institutions and in some subject disciplines.

2.47. Even when students do reach university there continues to be significant differences in attainment and progression during and after HE (see paragraphs 2.20 to 2.23). Therefore, although English HE has opened up to much greater numbers of students over the last 25 years with a wider number of students from under-represented groups, the differential attainment and progression rates raise concerns about the ability of students from all backgrounds to succeed in HE and then subsequently in employment. This means whilst the benefits of obtaining a degree are clear, not everyone benefits equally, be it at the point of entry, during study or in success measures after graduation.

⁷⁹ Ibid, table A8.

⁸⁰ Ibid, table A1.4a

⁸¹ Ibid, table A4.

Economic impact of WP activities

- 2.48. A clear economic benefit of WP schemes is their impact on the future employment of disadvantaged students. Enhanced employment opportunities lead to increased wage returns for the individual and, by extension, returns to the exchequer in the form of tax revenue and productivity. Walker and Zhu⁸² provide the most recent evidence of the private returns from obtaining a degree in their robust study, based on large-scale time-series data and econometric techniques. Their findings show that obtaining a degree leads to a 28 per cent average increase in earnings for men (approximately £168,000) and 53 per cent for women (approximately £252,000) compared to those without a degree. Whilst these are clearly private returns, Walker and Zhu also simulate the total estimated distribution in earnings for degree students versus those without a degree, and incorporate student loan repayments. This allows them to understand the tax revenue associated with higher earnings, and therefore the economic return to the Treasury from increasing participation. They conclude that HE is an important and favourable investment for the government as well as for students.
- 2.49. Walker and Zhu also find substantial differences in wages arising from different classifications of degree. They find that private returns from a first or upper second degree award are significantly larger than for lower degree classes (by £76,000 for men and £85,000 for women, on average). They also report that there is a considerable economic penalty to dropping out of HE without qualifications – male dropouts earn approximately the same as individuals who never attended HE. For females they find that there is a small wage penalty – dropping out from HE is worse than never attending HE at all.
- 2.50. This research suggests a considerable economic benefit arising from schemes which focus on degree success. Moreover, Feng and Graetz⁸³ use exam results and class of degree from five cohorts of London School of Economics (LSE) undergraduates in combination with a survey of their income in the year after they graduated to study the wage impact of different levels of degree. The study reveals that the average wage pay-off of a first class degree compared with an upper second class is approximately a 3 per cent higher expected wage. However, there is a bigger difference seen between an upper and lower second class degree – an upper second is worth about 7 per cent higher wages. When taking into account gender, the study found that men get around 6 per cent in higher wages from a first (a cash premium of £1,780) whereas there are no significant gains for women.

⁸² Walker, I., Zhu, Y. (2013). *The impact of university degrees on the lifecycle of earnings: some further analysis* Department of Business, Innovation and Skills, London, UK

⁸³ Feng, A., Graetz, G. (2013). *A question of degree: the effects of degree class on labour market outcomes*. CEP Discussion Paper No. 1221. London School of Economics, London, UK.

2.51. Outreach activities that aim to improve educational attainment in schools have been shown to increase the likelihood of participation in HE. They also have an influence on the economy. As well as the returns that arise through an increased number of pupils continuing into HE (such as enhanced employment opportunities and earnings), improving the attainment of disadvantaged pupils in schools has been shown to have an impact on gross domestic product (GDP) in the long-term. A study commissioned by the Sutton Trust and carried out by the Boston Consultancy Group in 2010 suggested that the UK's economy would see cumulative losses of up to £1.3 trillion in GDP over 40 years if the UK failed to bring the educational outcomes of children from poorer homes to the level of the UK average. The study calculated that bringing below average students in the UK to the national average would "add £14 billion a year to GDP by 2030 and £140 billion at today's prices by 2050. This would add 0.7 per cent to GDP by 2030; and 3.9 per cent by 2050".⁸⁴ The increase in GDP is driven by the increased lifetime earnings of students as they gain higher levels of qualifications.

Positive externalities

2.52. Recent research suggests that a number of additional positive externalities are associated with participation in HE, beyond the increase in earnings. A study conducted by the OECD⁸⁵ identified a significant gap in voting rates in OECD countries between adults with high (tertiary education) and low levels of education (below secondary education), to the benefit of the former.

2.53. Civic engagement appears also to be a side effect of participation in HE. Borgonovi and Miyamoto⁸⁶ observe the impact of HE on levels of trust and tolerance in OECD countries. They find notably that HE has an important marginal effect on interpersonal trust (17%) and positive valuation of immigration (41%).

2.54. In addition, Machin et al⁸⁷ find that criminal activity correlates negatively with higher levels of education. They calculated both the social benefit and reduction in crime that would be associated with a 1 per cent reduction in the number of individuals with no

⁸⁴ The Sutton Trust (2010) *'The Mobility Manifesto' A report on cost-effective ways to achieve greater social mobility through education, based on work by the Boston Consulting Group*. London, UK: The Sutton Trust. Available at: http://www.suttontrust.com/wp-content/uploads/2010/03/120100312_mobility_manifesto2010.pdf (Accessed: October 2014).

⁸⁵ OECD (2013) *Education Indicators in Focus*. Paris: OECD Publishing. Available at: <http://www.oecd.org/education/skills-beyond-school/EDIF%202013--N%C2%B010%20%28eng%29--v9%20FINAL%20bis.pdf> (Accessed: October 2014).

⁸⁶ Borgonovi, F. and Miyamoto, K. (2010) 'Education and civic and social engagement', in *Improving Health and Social Cohesion through Education*. OECD, pp. 65–110.

⁸⁷ Machin, S., Marie, O. and Vujic, S. (2010) *The Crime Reducing Effect of Education*. London, UK: Centre for Economic Performance, London School of Economics and Political Science. Available at: <http://eprints.lse.ac.uk/28727/1/dp0979.pdf> (Accessed: October 2014).

educational qualifications. Similarly, Sabates⁸⁸ found that an increase in educational attainment is associated with reductions in conviction rates for most offences (burglary, theft, criminal damage and drug-related offences) but not for violent crime.

2.55. Health is another important positive externality deriving from HE. In an OECD study, Miyamoto and Chevalier⁸⁹ observed a general positive correlation between education and health across OECD countries, showing for instance that 25 year olds with tertiary education are expected to live longer than those without. Several pieces of research have pointed out other impacts of HE on health such as lower mortality from strokes among higher educated individuals⁹⁰ and lower probability of smoking. For instance, de Walque⁹¹ finds in the US that one year of college reduces smoking prevalence by 4 per cent on average.

2.56. Widening participation strategies, therefore, may benefit the individual and wider economy in the following ways:

- **An increase in private economic benefits through increased university participation and retention amongst disadvantaged groups.** As well as improving the average wage returns of individuals participating in HE, an increase in revenue for the Treasury through taxation.
- **An increase in GDP through improving the academic outcomes of disadvantaged pupils.** In working with schools and raising both the aspirations and academic achievements of pupils, WP schemes contribute to the economy. It has been shown that bringing below average students in the UK to the national average would add billions of pounds to UK revenue through the increased earnings potential of these pupils throughout their lives.
- **An increase in positive externalities by the mere effect of greater participation in HE.** A considerable body of research has shown significant outcomes for HE attendees, which are difficult to measure in monetary terms, but are nonetheless socially fundamental (health, volunteering, inter-personal trust and political engagement).
- **An increase in human capital for individuals participating in HE.** Human capital theory (originally conceptualised by Adam Smith) puts a monetary value on the knowledge, skills and competencies of individuals.⁹² An individual's skills – and hence their future earnings – can be increased through education. The total human capital of

⁸⁸ Sabates, R. (2008) *Educational Attainment and Juvenile Crime: Area-Level Evidence Using Three Cohorts of Young People*, British Journal of Criminology, 48(3).

⁸⁹ Miyamoto, K. and Chevalier, A. (2010) *Education and health*, Improving Health and Social Cohesion through Education. OECD.

⁹⁰ Mackenbach, J. P. (2006) *Health Inequalities: Europe in Profile* European Commission Available at: http://ec.europa.eu/health/ph_determinants/socio_economics/documents/ev_060302_rd06_en.pdf (Accessed: October 2014)

⁹¹ De Walque, D. (2004) *Education, Information and Smoking Decisions Evidence from Smoking Histories, 1940-2000* World Bank Available at: https://www.aeaweb.org/assa/2006/0108_1300_0601.pdf (Accessed: October 2014)

⁹² Sweetland, S. (1996) *Human capital theory: foundations of a field of enquiry* Review of Educational Research 66(3)

the UK can be thought of as the sum of the total potential future earnings of everyone in employment. If disadvantaged students choose not to go to university, or perform below their potential when at university, this has an impact on their future human capital and the UK total. Moreover, if disadvantaged students perform below their potential when at university, this represents a loss of human capital.

Implications for an evaluation framework

- 2.57. Many studies that aim to evaluate the impact of HE on the individual, economy and society use national datasets, meaning it is difficult to separate out the impact on WP students specifically. Furthermore, these analyses use data collected beyond a year after graduation. Most institutions only hold data on the majority of their graduates up to a six month point after completion (the Destinations of Leavers from Higher Education Survey (DLHE) being the usual last data collection point for institutions), limiting the impacts that could be observed. The longitudinal DLHE, which takes place three and a half years after graduation, surveys a smaller sample of graduates making it difficult to use for individualised tracking or the evaluation of widening participation, with only small cohorts of different groups of WP students.

Summary of implications for an evaluation framework

- 2.58. The majority of the evidence about ‘what works’ is collected at institutional level and national evaluation frameworks are an emerging area of interest for policy makers and funding bodies, as demonstrated in HEFCE and OFFA’s joint national strategy for access and student success.⁹³ In order to strengthen the evidence base, there is a need for more consistent reporting across institutions to build a national picture and one that can allow for an understanding of what works, for whom and in what educational, institutional or regional contexts.
- 2.59. Our examination of the existing evaluations of impact highlights the following points that need to be taken into account in the design of an evaluation framework.

The ability to link existing datasets

- 2.60. There are examples in the literature discussed above that demonstrate the value in exploiting existing datasets for evaluating widening participation. This is particularly apparent when trying to understand the impact on individuals, the economy and society. As data does not currently exist at an institutional level that can be used for evaluating the impact of WP activities beyond six months after graduation (due to the sample sizes in the longitudinal DLHE), this limits the types and level of impact that can be evidenced at this

⁹³ HEFCE and OFFA (2014) *National strategy for access and student success in higher education* Department for Business Innovation and Skills https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299689/bis-14-516-national-strategy-for-access-and-student-success.pdf (Accessed: April 2015)

level. However, recent legislation opens the way for linking data sources at the national level (see paragraph 5.48).

The types of research carried out

- 2.61. A small number of the evaluation studies found in the literature were studies with comparison groups or RCTs, which provide the most robust evidence of a link between impacts and outcomes and WP activities. These are easier to execute for targeted activities but take more time to put in place. Ways of encouraging more studies like this should be considered, whilst taking into account they are not appropriate for evaluating the full breadth of activities that take place to widen participation.

The extent to which activities are embedded or targeted

- 2.62. Many WP interventions are embedded and delivered to whole cohorts rather than targeted to disadvantaged individuals. This seems to be particularly the case for interventions aimed at retaining students or those linked to success, progression and employability (whereas some outreach and transition into HE schemes are targeted). An evaluation framework that aims to evaluate WP fully must encompass all activities and with scope to understand differences in the magnitude of interventions, as well as their reach (the amount of individuals involved and whether interventions are targeted to disadvantaged students or rolled out to all).

The ability to monitor data throughout the student lifecycle

- 2.63. There is a wealth of research suggesting that early interventions, with continual engagement with students as part of a framework of delivery, are particularly successful in widening HE participation, as discussed in paragraph 2.12. The sector is at an early stage in being able to collect data that captures the interventions that are delivered and track students from school, through to HE and beyond (to understand outcomes). HEAT service is an example of good practice in this area. Being able to collect this information at a national scale is clearly desirable, providing an overview of the breadth of activities delivered, but is burdensome at present, particularly for the institutions that are not subscribing to HEAT.

Implications for an evaluation framework

- 2.64. Demonstrating the impact of WP funding, activities and resources can be problematic, at both an institutional and national level, for the following reasons:
- **Diversity in institutional approaches to WP** – institutional approaches to financial support, access and retention can vary widely, resulting in a myriad of different programmes across the sector, making tracking and evaluation at a system level difficult.
 - **Establishing cause and effect** – this can be challenging given how a variety of societal, policy, institutional and individual circumstances can influence outcomes.

- **Disaggregating impact** – linked to cause and effect, it is often difficult to disaggregate which components of individual schemes are the most and least successful.
- **Availability of research evidence** – the majority of the knowledge about what works in terms of access, retention and success strategies is held at an institutional level by staff working directly with students and is not always systematically published, aggregated or discussed at national policy levels.
- **Sampling issues** – evaluating interventions at institutional level is a challenge from a robustness point of view. Sample sizes will inevitably be quite small for single institution studies and this will limit the likelihood of finding a significant effect of an intervention even when there is one.
- **Time and capability** – institutions often lack the time or have limited expertise available to evaluate their own WP activities.
- **External validity** – interventions that are found to be successful at one institution may not be valid at another.

2.65. An evaluation framework must take into account the barriers to evaluating WP activities, providing a ‘best practice’ methodology so that, in time, institutions and the sector are better able to demonstrate the impact of their activities and funding.

2.66. The research suggests that a framework approach to evaluation, allowing for the consideration of the breadth and depth of interventions, is particularly effective. This would allow institutions to consider the mix of activities that they are putting in place and to assess their strategy as a whole based on the spread of this work within a matrix.

03. AN EVALUATION FRAMEWORK FOR WIDENING PARTICIPATION

This chapter describes how we developed an evaluation framework for widening participation.

- 3.1. The design of the evaluation framework was informed by feedback from all 25 institutions in the sample. The framework was designed to capture the breadth of impacts achieved through funding WP activities. We considered the aims and objectives of WP activities at an institutional level and how these contribute to national WP objectives, as well as measurable outcomes and how these impact on the individual, the region, the economy and nationally.
- 3.2. CFE researchers and associates initially ran an event in one region of the UK, facilitating discussions about both local and national impacts of institutions WP activities. The findings from this event were used to develop a draft framework and formed the basis for consultations with the other sample institutions.

The regional event

- 3.3. The pilot regional event took place at one institution on 1 December 2014. In attendance were representatives from a high tariff and a low tariff institution, alongside staff from the host institution, a medium tariff university. In total, there were 19 attendees at this event, representing the Students' Union, Admissions and Recruitment, Finance, Student Services and Planning, as well as senior academics with responsibility for widening participation.
- 3.4. The event was organised to explore the benefits and wider impacts of having a more diverse population entering HE, completing a degree and living and working in the local area, and to understand the benefits for individuals, communities and the economy.
- 3.5. The following questions were explored during the event:
 - Why is it important to support a more diverse student body, both into HE and through to success and employment?
 - How will we know if this diversity has been achieved – what does success look like?
 - What are the measures for monitoring and evaluating success?
- 3.6. The event was facilitated in three sections, allowing each question to be explored in turn, and included small group discussions and debate across the whole group.

- 3.7. Representatives were initially organised into groups based on their institution, allowing the institutional perspective on the benefits of WP to be captured. Towards the end of the session, representatives were put in mixed groups, allowing the diversity of opinions across institutional type to be explored.

Initial findings

- 3.8. All three institutions highlighted the benefits to investing in WP activities. From an institutional perspective, a more diverse student body is beneficial to the group as a whole, creating a more vibrant community with different perspectives and understandings. It also creates a larger pool of students to recruit from if everyone who is able to progress to HE is given the opportunity to do so. The benefits to the individual were also identified, in terms of social capital and from a financial perspective.
- 3.9. The risks of WP were also discussed. The cost of WP is significant and there is a risk of reputational damage if the complex needs of a more diverse student body are not met. There is also a risk of affecting performance in league tables that do not take WP context into account.
- 3.10. It was interesting to note that each university approached WP work very differently, influenced by their missions and strategic objectives. This was particularly evident when we discussed the impact of WP activities on the local area and communities. The low tariff university clearly identified its role as an 'anchor institution', working closely in partnership with the local council, schools and employers to contribute to the local regeneration of the area. They highlighted the complexity of quantifying the benefits of this work, as well as attributing those benefits to the work of the university. In contrast, the other institutions talked about the benefits to the local area whilst the students were studying (such as financial benefits for local businesses) and then the impact on the community after graduation. However, depending on the mission of the institution, these impacts may not be seen in the universities' locality but the area that graduates choose to work.
- 3.11. The diversity of perspectives was also apparent when we began to discuss WP success measures. There was agreement that the best measure of success is that students are making the right choice about the right subject and institution for them. However, for some institutions success was demonstrated through retention and the completion of any award, recognising the distance travelled for that individual. In contrast, another institution was more concerned about national measures of success, such as the UK PIs and the proportion of firsts and 2:1s achieved.
- 3.12. The national data that is available for monitoring WP is clearly influential on behaviour, including in the definitions of who to target for outreach activities and what to monitor throughout the student lifecycle. One university asked whether sector and

institutional targets should be set that more clearly articulated the wider aims of WP work; however, there was little agreement as to what these measures might be.

- 3.13. Measuring the wider impacts of WP was also viewed to be problematic for institutions. The financial and employment benefits of gaining a degree were identified as important things to measure but accessing data beyond the DLHE survey was not possible for the institutions. The fact that the DLHE is collected six months after graduation was also seen to be a limitation, given that graduates may see benefits throughout their career and at different paces, dependent on the industry that they are employed in. The longitudinal DLHE was mentioned as being an interesting source of information but the small sample sizes mean it is difficult to use to evaluate WP initiatives, with a very small proportion of individuals included from WP backgrounds at some universities. The more experiential benefits of widening participation, such as on health and wellbeing or on citizenship and contribution to the local community, were seen as valuable areas to understand but challenging to monitor quantitatively.

Developing logic chains and an indicator bank

- 3.14. The feedback collected from the three institutions that participated in the pilot event was used to produce an evaluation framework for widening participation. The evaluation framework comprises logic chains and an indicator bank for the associated inputs, resources, activities, outputs, outcomes and impact statements and is based on the original conceptual framework discussed in Chapter 2. The logic chains and indicator bank are included in Appendix 1.
- 3.15. The evaluation framework was intended as a draft document, a guide to the process of WP, based on the practice at the three institutions that participated in the regional event. Understanding the activities and what universities hope to achieve through their WP work is fundamental to designing a framework suited to evaluating its success. The logic chains for outreach, retention, student success and supporting disabled students show the resources and activities that were identified through the initial event and link these with the outputs, outcomes and impacts deemed important by the institutions.
- 3.16. The logic chains aim to help establish the intended causal chain between the SO allocation, additional fee income assigned to WP work and other spend and the goals of universities and HEFCE to widen participation in HE. It helps to map activities and link these to measures of impact and effectiveness. The logic chains can be used to map how activities are intended to realise certain outcomes. The inclusion of logic chains as part of the evaluation framework provides a visual representation of WP activities, outputs, outcomes and impacts that is accessible and easy to understand.

- 3.17. The logic chains are supported by an indicator bank outlining suggested indicators to measure WP activities and impacts, along with possible methods of gathering data for these indicators.

Conducting the fieldwork

- 3.18. The findings from the pilot regional event, as articulated in the evaluation framework, demonstrate the diverse views of three institutions. The aim of the remaining fieldwork was to explore in depth the impacts of WP at an institutional, regional and national level and to understand how these impacts might be measured and understood. The evaluation framework was used as the basis for discussion of impact with institutions, allowing them to challenge the underlying assumptions, the proposed outputs and outcomes and the suggested measures.

04. EVIDENCE FROM INSTITUTIONAL VISITS

This chapter provides a synthesis of evidence gathered from institutional visits and interviews with stakeholders on the impact of widening participation and how institutions evaluate it.

Gathering evidence

- 4.1. Institutional approaches to WP were explored during the fieldwork phase of the project. At each institutional visit with the 25 sample institutions, examples of the types of activity and resources used to widen participation were sought, as well as the outputs and outcomes that were desired. It was also important to understand how these were evaluated and the demonstrable impacts that could be identified.
- 4.2. The logic chains and indicator bank were used in the meetings as a basis for the conversations, providing a model of WP that could be tested, approved or challenged. Discussing each of the different logic chains in turn (outreach and access, retention, student success and supporting disabled students) allowed for these streams of activity to be explored in detail leading to a deep, contextual understanding of the work that takes place across the sector. The broad spectrum of staff involved in the institutional meetings also allowed us to explore their WP strategies and how these contribute to the mission and vision of their institution.
- 4.3. In total 124 members of academic staff were included in this fieldwork phase as well as 14 stakeholders. Staff members representing their institution came from many varied areas and departments, including finance, planning, admissions, academic staff, strategic decision makers (including pro vice-chancellors and senior academic staff) and student support. Stakeholders included student representatives, employers, schools and local authorities. After each visit, the findings were captured and shared with the research team, allowing for the focus of future visits to be modified. This meant that we were able to explore in detail any additions to the logic chains or any areas that might require changing.
- 4.4. CFE organised longer visits with four institutions to carry out 'micro-studies', one for each logic chain. We discussed outreach and working with disabled students in more depth with a high tariff institution in each case and we discussed retention and student success with a medium and low tariff institution respectively. We were able to engage with institutions more deeply and were able to explore the impact of their locality and region on their WP activities. We also developed six case studies that illustrate in detail the impacts that have been achieved at six different institutions, taking into account the contextual

factors of their mission, institution type and region. These are published separately as 'Supplementary case studies'.

4.5. This chapter synthesises the evidence provided by institutions in the visits and micro-studies. We explore the extent to which the evaluation framework was considered to provide a useful basis for evaluating impact, the types of evidence that institutions already gather and what would need to be captured in future to populate a framework. We also describe the rich types of impact that are achieved by institutions, including those that are more difficult to measure.

4.6. The financial inputs are described next, followed by sections describing outreach and access, retention and student success and supporting disabled students. We also summarise evidence gathered on wider benefits for individual students, communities and local economies.

Inputs

4.7. The institutional spend on WP is accounted for from two main sources: the OFFA-countable additional fee income, which is estimated in the access agreement and reported on in subsequent monitoring; and the SO allocation. Many institutions stated that they spend additional, sometimes substantial, amounts on WP but that this is much harder to account for. This is particularly the case for embedded activities that reach all students (it is therefore difficult to account for the spending that is specific to WP students).

4.8. There are also other funding sources which may equate to large contributions to WP activity. Examples were provided of additional spend that was linked to specific projects or groups of students, with funding provided by local and national employers and stakeholders and the local authority. Some institutions also receive support from alumni and other benefactors specifically for WP activities.

4.9. Accounting for the total WP spending was seen as problematic for all types of institutions in the sample. Some FE colleges offer support services to both FE and HE students, making it difficult to calculate the expenditure for HE students alone. Many HE institutions have embedded their provision of retention and student success activities, apportioning the SO allocation across academic areas and supplementing it with other income, to deliver activities as part of core teaching or pastoral support rather than as separate strands of activity. This makes it more difficult to classify expenditure as WP.

- 4.10. The sister project⁹⁴ to this research focuses on developing a data return to better account for spending of the SO allocation. The resulting report explores in further detail how institutions account for WP funding and the challenges of providing more detailed reporting on spending.

Implications for an evaluation framework

- 4.11. Evaluating WP activities by tracking through the inputs to detail precisely how every pound was spent is highly problematic for institutions. A national approach would be required as many activities are set up and accounted for differently at each institution. This would require a redesign of financial and record keeping systems and be potentially burdensome. This was felt to be particularly challenging for embedded activities.
- 4.12. Understanding the size of the investment in WP as an input is possible, however. The SO allocations and OFFA-countable expenditure are available publicly and other income streams are broadly identifiable at an institutional level.

Access and outreach

- 4.13. We focused most (but not all) of our discussions on the role and effectiveness of access and outreach on more selective institutions for whom widening access to HE to disadvantaged and under-represented groups is a greater priority than retention.

Activities and resources

- 4.14. Institutions consulted generally felt that the typology of outreach and activities provided in the draft logic chain covered most, if not all, of the activities they currently deliver. Additional definitional guidance would be needed if such a list were to form the basis of data collection and reporting to ensure a consistent approach.
- 4.15. Institutions highlighted their collaborative outreach work with other partners, such as employers. One case study institution talked in some detail about their work as members of a regional partnership to promote science, technology, engineering and maths (STEM). Partnership members, including local STEM employers, get involved in delivering outreach activities including speaking at events for parents, pupils and teachers to help them better understand opportunities in STEM careers.

⁹⁴ CFE Research (2015) *Student Opportunity outcomes framework research programme: Data return project*. Bristol: HEFCE

- 4.16. Information, advice and guidance were also highlighted as important activities to support widening access. Other research⁹⁵ highlights the importance of good careers related advice and guidance in helping young people make informed choices about HE and ensuring they make the right decisions along the way – for example about what subjects to study at level 3 according to their longer-term career and educational aspirations. One institution in particular expressed concern that the lack of professional careers advice in some schools means students are reliant on less reliable sources of information.

They're bereft of professional careers guidance prior to coming in and parents still are influencing choices, but they are badly informed themselves.

Low tariff institution

- 4.17. This illustrates how factors often outside the HE sector's control can and will impact on WP outcomes. While it is not the role of HEIs to deliver careers guidance in schools, the institution above is keen to explore how they can support others who provide guidance to make sure it is better informed and relevant to HE choice. Other institutions also highlighted activity to support and develop the capability of teaching and other staff working in schools and FE as a key part of their strategy to widen access.
- 4.18. There is recognition across a number of institutions we consulted that outreach and access activities are best delivered as a coherent package or progression pathway that combines a number of different activities. This is felt to be more effective than ad hoc or one-off activities. This is supported by other research evidence⁹⁶ and our case study of outreach at the University of Kent provides additional emerging evidence to affirm this belief.
- 4.19. Other research also shows that starting interventions early is important and that pupils and young people need to be engaged at different stages.⁹⁷ Our case study of Trinity Laban Conservatoire of Music and Dance illustrates how this is particularly important for developing the necessary ability to pursue HE in the performing arts.
- 4.20. What was evident from our discussions with institutions were the subtle differences in interpretation and delivery of core outreach and access activities. While activities could generally be grouped under the headings used in our logic chain, there was a diversity of

⁹⁵ Moore, J. Sanders, J. and Higham, L. (2013) *Literature review of research into widening participation in higher education* OFFA <http://www.offa.org.uk/wp-content/uploads/2013/08/Literature-review-of-research-into-WP-to-HE.pdf> (Accessed: May 2015)

⁹⁶ For example, Gale, T. and Parker, S. (2013) *Widening Participation in Australian Higher Education* Bristol, UK: HEFCE and OFFA. Available at: http://www.ncsehe.edu.au/wp-content/uploads/2013/10/2013_WPeffectivenessAus.pdf (Accessed: October 2014)

⁹⁷ Moore, J. Sanders, J. and Higham, L. (2013) *Literature review of research into widening participation to higher education* Bristol, UK: Higher Education Funding Council for England. Available at: <http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/literaturereviewofwpttohe/Literature%20review%20of%20research%20into%20WP%20to%20HE.pdf> [Accessed: 6 October 2014].

approaches within each category, for example, in terms of audience, who delivered the activity, the frequency and length of intervention. It may be difficult for a broad sector-level evaluation of 'what works' to account for these differences of approach and they are not reflected in the draft evaluation framework.

Outputs

- 4.21. In the draft evaluation framework, outputs from outreach and access activities are measured in terms of the numbers of individuals engaging in the different activities from key WP groups. Again, institutions felt that these covered most key target audiences and are an appropriate list for a national level evaluation. However, there was also an acknowledgement that there will be local and institutional level variations in the types of students who are under-represented and thus a target for outreach activity. Specialist institutions in particular may target different groups – this is illustrated by our case study of Trinity Laban.
- 4.22. Institutions with higher proportions of mature (who are also often part-time) students argued that this was a key group worthy of monitoring. This is perhaps particularly important given that part-time students appear to have been more adversely affected by the increase in tuition fees with the number of part-time enrolments declining by 15 per cent between 2011-12 and 2012-13.⁹⁸
- 4.23. Monitoring outputs in terms of numbers engaging in activities was seen as relatively straightforward. However difficulties are encountered in obtaining data on some participant characteristics. Data on who is receiving free school meals was frequently highlighted as a particular challenge. Relying on participants to disclose this kind of information was not felt to be helpful – there are concerns about the reliability of data collected in this way and it was perceived as a potential barrier to participation to ask too many intrusive questions. However institutions also recognised that having this kind of information about pupil (and other participant) characteristics at an earlier stage in the process could be helpful in order to help target activities. The data sharing protocols and use of administrative data by the HEAT initiative show how some of these challenges may be addressed (see the University of Kent case study for further detail).

Outcomes

- 4.24. The key indicator of success for outreach and access activity is arguably an increased proportion of students from the target WP groups applying to and entering HE. Monitoring participation of three of these groups (pupils from state schools, low-

⁹⁸ HESA (2014) Higher education student enrolments and qualifications obtained at higher education institutions in the UK for the academic year 2012-13 Statistical first release 197 HESA [Online] <https://www.hesa.ac.uk/pr/3103-statistical-first-release-197> (Accessed: May 2015)

participation neighbourhoods and lower socio-economic groups) is a key element of UK PIs.⁹⁹

- 4.25. More useful, but also more challenging, is linking these outcomes to the interventions of HEIs. Institutions that carry out longitudinal tracking of outreach participants or that subscribe to HEAT are able to measure what proportion of participants in different activities progress to HE. For example, one institution taking part in this research reports that 28 per cent of participants in outreach activities from low participation neighbourhoods progressed to HE (within two years at age 18 or 19) compared with 20 per cent across all low participation neighbourhoods in the area.
- 4.26. What is missing from the evaluation work undertaken to date, however, is more robust comparator groups (that is, disadvantaged students who did not receive outreach interventions). This would strengthen the ability of longitudinal tracking activity to attribute any differences in participation to the interventions being evaluated.
- 4.27. Supporting increased numbers of disadvantaged students to enter high-tariff institutions was less of a concern for institutions with lower-tariff entry requirements. But institutions recognised that this was a legitimate outcome to evaluate given the disparity in participation between advantaged and disadvantaged groups at high tariff institutions. Institutions' outreach work may contribute to this objective, even if the institute itself is not high tariff.
- 4.28. Our draft evaluation framework includes other measures to capture the prerequisite changes to attitudes and understanding needed to progress to HE. Many institutions in our sample are working to capture this type of information in some form, for example, by carrying out pre- and post-activity questionnaires to participants. Some outreach activities aim to widen educational aspirations more generally (rather than specifically to HE), to broaden public engagement in particular discipline areas such as the arts or science or to enhance civic involvement. These activities will have wider benefits than enhancing access to HE.
- 4.29. An important outcome of outreach work that was raised by many institutions was to ensure students were well informed and had the confidence to make a decision that was best for them. Institutions realise that as well as helping to ensure that those who would benefit do participate in HE, better information may mean some people do not choose to progress to HE. An informed and active decision that HE is not the right option is still a positive outcome. Depending on the primary objective of an evaluation of WP activity, this may or may not be worth measuring. So, if the aim is to show that investment in WP activity is worthwhile, then positive outcomes such as this are of interest. If the aim is more

⁹⁹ See <https://www.hesa.ac.uk/pis>

specifically to understand what works in encouraging under-represented groups into HE, then this is less relevant.

Implications for an evaluation framework

- 4.30. Many institutions commented on the difficulties in defining a WP population, given the multiple definitions of what should be included across the sector. Mature learners, up-skilling employed individuals, women in STEM and recruiting from the locality to postgraduate programmes were all suggested as WP target groups not currently represented in the logic chain typology. Whilst there was widespread agreement about some of the WP categories, such as low participation neighbourhood indicators and disabled students, others varied in line with the institution's mission and values. Similarly, whilst the typology of activities and resources did match the work carried out by the sector, there were different interpretations of what the terms meant.
- 4.31. This raises the question as to how prescriptive the evaluation framework should be. The framework could describe the groups targeted and the expected outcomes, with standardised data and monitoring that is expected alongside it. An alternative is that the framework could describe a methodology for evaluation with institutions monitoring their relevant WP populations and sharing outputs with the sector.
- 4.32. Institutions also discussed the importance of outreach and access activities on retention. Ensuring that students make the right choice about studying at HE, then about the institution and subject, coupled with information and guidance to help with the transition to HE has been seen to improve retention at a local level. The final evaluation framework needs to take into account this student lifecycle approach to widening participation.
- 4.33. Many institutions described the value that could be gained from tracking individuals from first point of contact (outreach activity) through to enrolment and beyond. This was particularly the case for institutions currently working with HEAT; however, a number of institutions had developed their own tracking systems locally or regionally. As described in the above section, better comparison data at a national level would strengthen the ability to use this data for evaluation purposes.
- 4.34. The social capital of individuals was raised as an area of interest by many institutions that work with large numbers of WP students and is also of interest to HEFCE, who are considering measuring social capital in future.¹⁰⁰ An individual's social capital impacts on their understanding and expectations of HE, as well as on their advisors such as parents and peers. The evaluation framework includes the outcome 'greater

¹⁰⁰ HEFCE (2015) *Business plan 2015-2020* Higher Education Funding Council for England Available at: http://www.hefce.ac.uk/media/hefce/content/about/How_we_operate/Corporate_planning/Business_plan/HEFCE%20Business%20plan%2011%202%2015.pdf (Accessed: May 2015).

understanding of the benefits of HE' and investigating social capital is an important part of evaluating this outcome. Social capital, and other felt experiences and perceptions, are difficult to evaluate quantitatively and are currently explored through questionnaires, if at all. The framework should allow for appropriate qualitative evidence, supported by quantitative monitoring, to be included in evaluations and could provide best practice guidelines for carrying out work like this.

Retention and student success

- 4.35. The institutional consultations focussed on student success and what it means for their students and their institution. This section describes the activities and resources that were highlighted by institutions as contributing to student retention and success and the outputs and outcomes achieved.

Activities and resources

- 4.36. Many institutions thought that the draft evaluation framework included the types of activities that they carry out to improve retention and support student success. The retention and success activities were shown on different logic chains so that the full breadth of activities, outputs and outcomes could be explored but many institutions commented that many retention activities were concerned with raising aspirations and thus contributed to success measures, meaning this split was artificial. The design of the logic chains could be simplified by merging them together.
- 4.37. Many institutions described the importance of taking a student lifecycle approach to tackling retention issues. This approach recognises that providing the right advice and guidance upfront can help to ensure that the right students are studying at the right institution on the right subject for them. The best methods for evaluating longitudinal approaches to WP were discussed, with individualised tracking seen as being a viable approach. The breadth of individualised monitoring differed across the sector, however. Whilst quantitative approaches may provide a broad understanding of behaviour, a qualitative approach may provide a more detailed understanding of the challenges faced by students and the support that they value. This was the approach taken by Vision West Nottinghamshire College as described in the case study, where 10 students are being tracked through their studies and interviewed each year.
- 4.38. As demonstrated in the literature, transition and induction activities contribute to retention and were seen as incredibly important to many institutions. One institution described how transition and induction take place at many different stages in the student journey, for example before and after going on a placement, describing it as:

Transition is around anything that changes the landscape for [students].
Low tariff institution

- 4.39. Evaluating the quality of transition and induction activities has been achieved by institutions through questionnaires, as well as monitoring cohort retention figures. Often these types of activity are linked to the concept of student engagement and aim to capture the expectations of students and their current engagement levels.
- 4.40. Much of the retention support provided is delivered to all students, embedded in the programme or curriculum. Some institutions described how targeting is problematic, drawing attention to characteristics that people might not want highlighting; though there are examples of targeted support to help 'level the playing field'. For example, one institution that was consulted delivers a care leavers support programme that engages care leavers through outreach and then provides ongoing support once they arrive at the university to ensure they are retained and successful. Evaluating targeted activities is less problematic than embedded activities, as a defined population (the target group) can then be monitored. However, fewer examples of these types of activity were provided by institutions.
- 4.41. Student success activities are often embedded in programmes too, with employers involved in programme design – and delivery in some cases – and employability activities included in the curriculum. One low tariff institution described how WP students are difficult to reach by careers teams, with students not confident to approach them directly. Instead, careers teams work directly with academics to ensure that they were able to access students via their programmes, with further support provided at drop in sessions in busy student areas.
- 4.42. One low tariff institution described how they have a significant central budget allocated for student success and retention activities. Academic areas can bid to undertake innovative pieces of work and are incentivised through the funding to carry it out:

An academic school bid for some funding for a project called [name of project]. That's a mentoring process which starts for all new students [in the school] when their places are confirmed in August. It's an online resource to introduce them to the nature of the work they'll be doing in university. The school says it is already impacting on their first year retention, as the students are not arriving with a completely blank sheet, and are not as fazed as they were by the initial parts of the course.

Low tariff institution

Outputs

- 4.43. Many institutions discussed the monitoring that takes place around retention and student success. This can be quite sophisticated at some institutions, particularly those with large intakes of WP students. One low tariff institution discussed how retention statistics, split by academic area and programme, are received by key academic committees and

used by academics and managers. The data shows retention rates by protected characteristics and WP markers.

4.44. Smaller, specialist institutions and colleges both described how difficult this type of monitoring was, with very little resource available to carry out the analysis, a lack of expertise in this area at some institutions and small numbers of WP students, leading to meaningless comparisons between groups.

4.45. One low tariff institution described how important monitoring data was in setting priorities for work to improve retention. Programme leaders are expected to develop action plans should their retention rate fall below a target level, with additional resources made available through a committee. This allows specific interventions to be implemented, with data driving this, as this interviewee explains:

On [one of our] programmes, it has been demonstrated that students that come in with BTEC qualifications, even though technically they have higher points, which skews the data, they are less prepared, and they are more likely not to be retained. There were specific interventions [put in place] such as the way tutorials and small group work has been managed.

Low tariff institution

4.46. At some institutions, the work for retaining students is devolved to faculties in terms of tracking and early identification of students at risk. Provision of pastoral support through personal tutoring or other similar schemes is often put in place for this purpose. Other institutions described how they are investing in student engagement software. This uses attendance monitoring data, library usage and other indicators to flag up 'at risk' students. However, even with the addition of data, institutions described how important the tutor-student relationship is to ensure that students are retained and are succeeding and that the data is used to support, not replace, this relationship.

4.47. The concept of student engagement was discussed by many institutions. Wider engagement in societies, clubs and other extra-curricular activities was seen to be positive for future success and enabled students to mix with a wide group of peers. Similarly, activities that expose students to the world of work and social norms outside what they may have experienced previously were viewed as beneficial to students. Evaluating this, though, remains problematic, with data difficult to collect and student surveys in this area in their infancy at most institutions.

Outcomes

4.48. Many institutions described how they monitor their retention longitudinally, using UK PI data and internal key performance indicators. This allows institutions to understand their performance over time and to set realistic targets. Targets are set as part of the OFFA

access agreement and one low tariff institution discussed how this was driving positive internal behaviour, with a greater emphasis on monitoring performance internally.

- 4.49. The UK PIs were widely discussed as being useful for evaluating retention and success and for benchmarking against similar institutions. However, FE colleges commented on the difficulty in accessing comparable data. Similarly, FE colleges discussed the role they play in supporting students who find that studying HE at a university is not for them to complete an award at an FE college. Transfer from HE to FE is not recognised as a positive outcome in the UK PIs as this data is not currently reported. It was shown in the literature review that going to university and dropping out has a negative impact on wage returns over the length of a career, and can be as bad as, if not worse than, not going to university at all (see paragraph 2.49).
- 4.50. The DLHE survey was seen by institutions to be a key tool for measuring outcomes in terms of graduate employability, destinations and salaries. However, many institutions consulted highlighted the limitations of this as a source as it surveys students just six months after graduation. This was not felt to be long enough into graduate careers to fully capture the impacts of HE. One institution described the DLHE as 'a blunt instrument'. The longitudinal DLHE, which takes place three and a half years after graduation, has too small a sample size to be informative from a cohort perspective, so was not deemed useful for evaluating the success of WP interventions.
- 4.51. As the cost of HE that is passed onto the student has increased substantially in recent years, so there is increased interest in demonstrating to students, potential students and their parents the individual economic benefits that can be reaped in return. There is increasing pressure for institutions to show high levels of graduate employability and that alumni progress into well paid jobs and therefore get a good return on their investment. The case study of Liverpool John Moores University explores the ways in which they are working with students to help them progress into employment.
- 4.52. Institutions highlighted that evaluating student success beyond the reach of the DLHE survey, six months after graduation, is difficult. Some are able to monitor graduate outcomes at a local, subject specific level through their alumni network and through academics but this is often not systematic. Many institutions described student outcomes that are not typically classified as 'graduate level' (not professional or managerial work or graduate level further study), but which are still a positive outcome for an individual. One low tariff institution described how their large migrant community were exposed to different cultural and educational norms whilst studying with them, leading to greater integration into the community after graduation.
- 4.53. The specialist institutions in the sample described how creative graduates may not earn as much as other graduates but they contribute significantly to society through creative ventures. This is explored in the Trinity Laban case study. This demonstrates some

of the complexity involved in evaluating the outcomes of students, and the limitations of focusing purely on financial returns to individuals.

- 4.54. Encouraging progression into postgraduate study was a growing area of concern for WP practitioners in the sample institutions visited. How best to identify a WP student at postgraduate level and how to support these students into postgraduate study was felt to be problematic.

Implications for an evaluation framework

- 4.55. Many institutions have taken an approach of embedding WP and in particular retention and success activities, rather than delivering discrete projects and services. This is coupled with increasing pressure to evaluate the impact of these activities, both internally, to understand what works, and for an external audience, to account for how strands of funding for WP are spent.
- 4.56. Evaluation, therefore, remains an area of great interest but one of difficulty for the institutions in the sample. One low tariff institution described how retention and success activities had complex and subtle relationships with each other and the difficulties involved with trying to make sure that new initiatives did not undermine other work going on or previous successes. However they did recognise the value of evaluating particular activities to help counter this issue:

[It is important to do] as thorough an evaluation that you can of things that you set up, in the hope that they will make a significant impact, rather than allowing it to become a matter of urban myth as to whether they were beneficial or whether they weren't. You know, do a proper evaluation and try to isolate what it was that that particular initiative contributed, and why it did or didn't [work].

Low tariff institution

- 4.57. Some of the larger institutions in the sample described how they had evaluation teams (or 'virtual teams' of individuals that came together to contribute to evaluation) that are able to support WP activities. Many are able to call upon academic support to help carry out evaluations robustly. An evaluation framework could consider the ways in which these approaches can be captured as best practice to inform how other institutions carry out evaluations.
- 4.58. The ability to track and monitor students is arguably easier in relation to retention outcomes given the data is held centrally by the institution. However, some smaller institutions described the difficulties with sourcing and using internal data and the relevance of the analysis when very small numbers of WP students are involved. Many institutions hold information on financial support and on WP interventions in separate databases to

their student records (which would contain retention and success indicators), adding a further layer of data extraction to the evaluation process.

- 4.59. It may be preferable for the evaluation framework to take into account the available resources for carrying out evaluations and for manipulating data. Considerations about the breadth and depth of evaluation required at a local level to inform the national picture are advisable, particularly to reduce the burden on smaller institutions.

Supporting disabled students

- 4.60. The logic chain for supporting disabled students mirrors the other logic chains, with similar activities, outputs and outcomes as they apply to disabled students. Institutions' comments on the appropriateness of the logic chain were therefore similar to those on the other logic chains. However, our discussions on supporting disabled students generated evidence of institutions' approaches to this area of work and how they evaluate it. This is summarised in the following section.

Activities and resources

- 4.61. Practitioners involved in supporting disabled students described how their roles have evolved over the short to medium term. Several institutions participating in the research reported an increase in students disclosing dyslexia, dyscalculia or other learning difficulties. One institution described how many students are better prepared and understood their condition. This was thought to be because of early diagnosis at school and coping mechanisms being introduced earlier in their education. However, some institutions described how mature students returning to education may be diagnosed for the first time during their HE studies. This was discussed by some colleges with students with a wider range of entry qualifications and a broad entry age range.
- 4.62. Many institutions described the increased numbers of students presenting with mental health conditions and the challenges that this presents. The support required to deal with mental health conditions is often complex. One institution described it this way:

I think mental illness presents its own unique set of problems, because of the nature of the condition...with someone who is having a mental health crisis, often the world is illogical, and they are logical. There's only so far that we can go, because our duty of care, they are adults, they are living away from home, there is only so much you can do if a student is in crisis in that way.

Low tariff institution

- 4.63. The changing numbers, types and severity of disabilities seen in HE institutions does present some challenges for evaluation, particularly when some of the interventions put in place are reactive to the needs of the student body, rather than planned. Many

interventions are targeted to meet an individual's need and a lack of standardisation can also complicate the evaluation process.

- 4.64. Learning and teaching interventions were seen to be imperative to enable students to succeed. Disabled students benefit from a wide range of support, from targeted individual support such as note takers and deadline extensions to embedded support. Specialist institutions, colleges and some low and mid tariff institutions described the challenges involved with supporting large numbers of disabled students and the successes that have been achieved by requiring courses to meet set standards, such as allowing lecture notes and slides to be accessed prior to delivery. These types of intervention benefit disabled students but are also felt to be positive elements in the educational experience of all students. One institution described embedded support for disabled students, as follows:

Disabled students are given something called a personal learning plan that outlines what reasonable adjustments they need for their learning and what we've tried to do with that project is just lift dyslexic students out of it. So we're basically saying the support that should be put in place for dyslexic students is actually good practice for all students. What we're trying to do is to recognise that inclusive curriculum is the norm, rather than as something different.

Low tariff institution

- 4.65. Specialist support for supporting disabled students was viewed as an important resource at all institutions where we discussed it, with teams ensuring that reasonable adjustments are in place, assessments are available and counselling services are delivered. A specialist institution with a high proportion of dyslexic students compared with the rest of the sector commented on the work that specialist teams have put in to increase academics' understanding of learning difficulties. This strategy reduces the stigma associated with disclosing dyslexia on their course and allows specialist support to be put in place.

Outputs

- 4.66. Early disclosure was said to be important by institutions, allowing interventions to be put in place right from the start of students' academic careers. Institutions described how they are able to take a lifecycle approach to supporting disabled students where early disclosure takes place, identifying students at the application stage and inviting them to workshops or summer schools prior to enrolment and ensuring that support structures are in place from the first day of study. This also allows for monitoring to take place throughout their student journey.
- 4.67. Some interventions are so embedded at institutions that they are not even recognised as an activity or a use of resource that could be monitored. For example, one high tariff institution described how the curriculum design committees and processes take responsibility for embedding disabled student support into programme design and delivery

and this was not considered as a WP activity. Furthermore, one institution described how their interventions are intended to support disabled students, as well as all other students:

I'd say most of what we do ticks many boxes and I think we very deliberately do it in that way because we're trying to get the maximum benefit for any interaction or any level of engagement that we engage in.

FE College

Outcomes

4.68. The literature shows that disabled students have lower degree outcomes; however, those supported by the Disabled Students Allowance achieve a higher proportion of firsts and 2:1s than those who are not supported.¹⁰¹ Disabled graduates also do not perform as well as their counterparts, with a lower proportion of disabled leavers working full-time and a higher proportion unemployed compared with non-disabled leavers.¹⁰²

4.69. Many institutions argue that positive graduate outcomes are wider than achieving graduate level work or progression to postgraduate study, particularly for people with disabilities. One institution described how an alumnus with a disability was engaged in fundraising and other community support and this was a positive outcome of achieving her degree.

She was too ill to work. She was disabled but nevertheless she got her qualification and now she's an asset to her community and inspiring other people.

Specialist institution

4.70. One institution talked about their perceptions of the benefits of making the physical estate more accessible. They feel these changes benefit all students, not just those with disabilities. Providing welcoming, attractive and accessible shared spaces was felt to enhance social engagement:

It's about the shared space where students congregate. You know, needing to [have] a certain feel for it, because if you don't have appropriate shared space then you go and retreat back to your own space. You sit in a box and you don't really engage socially. Then you think about the impact of wellbeing on that, so it's really important that universities get the shared space right.

Low tariff institution

¹⁰¹ Equality Challenge Unit (2014) *Equality in higher education: statistical report 2014* London: ECU Available at: http://www.ecu.ac.uk/wp-content/uploads/2014/11/ECU_HE-stats-report_student_v19.pdf (accessed: April 2015).

¹⁰² Ibid.

- 4.71. However, measuring this kind of impact of their investment is difficult for the institution beyond gathering informal feedback:

I was speaking to somebody who has done a foundation degree and [he] said that at the partner college he never went to the library, but here they all meet [at] the library and that he had really enjoyed the fact that the academic side of things became the hub of the social as well. He'd really flourished under that. The shared space massively promotes friendship and learning.

Low tariff institution

Implications for an evaluation framework

- 4.72. Institutions with the ability to identify, track and monitor disabled students early in the student lifecycle seemed to be more able to evaluate activities successfully. However, evaluating embedded activities is a particular issue given that most of these interventions affect the learning and teaching strategy and thus the outcomes of all students. Monitoring the gap in performance between student groups could be an appropriate evaluation technique here; however, it could not differentiate between the impacts of different types of activity on the same group of students.
- 4.73. Having access to data from schools would allow better monitoring and tracking of students with disabilities, allowing for earlier targeting. However, data sharing between schools and HE institutions is managed at a local level and this data is not shared as standard for these purposes. Using existing data sources to improve evaluation is one potential approach that could be explored further.

Impact

- 4.74. In our logic chain we differentiate between the benefits for individual WP students of in HE and benefits to the local area, society and wider economy.

Individual benefits

- 4.75. A clear benefit for participating in HE is the increased wage premium in the workplace. However, institutions with higher proportions of WP students in particular were concerned that a focus on measuring financial benefits may be too narrow in some circumstances. Many made a plea to recognise that students have their own goals and ambitions for participating in HE. Specialist institutions with narrow portfolios of courses, often with particular vocational relevance (such as teaching or creative arts), also highlighted that their students enrolled on their courses with specific career goals in mind, but that these often had relatively low levels of pay. Salary returns were also viewed by some as a crude measure of wider impact. Some jobs with lower levels of pay (such as teaching or speech and language therapy) might arguably be said to have other societal benefits. Some institutions also highlighted that some students choose to remain in the local area after graduation because they are attracted to the quality of a place (for example,

the lifestyle of a more rural setting) and this outweighs drawbacks of lower levels of pay or graduate employment opportunities.

One of our previous students [...] she couldn't get a job and she wanted to stay here. She could have got a job at home but didn't and stayed here [...] What is it they're trying to measure, what is 'good'? Is it about my personal wellbeing?

Specialist institution

- 4.76. Taking account of the local labour market economy was argued to be important when considering individual economic returns. At highly inclusive institutions in particular, many students are recruited locally and local graduate employment opportunities may be limited. Mature students in particular may be limited by personal circumstances in their ability to relocate to other areas, thus limiting their ability to take up the best graduate opportunities.

We are a region [with a lot of small and medium-sized enterprises]. [...] We do not have the ability to attract fantastic employers to come [to this region]. So we are then into persuading our students to relocate and because of the make-up of a lot of our students, with caring responsibilities or with children, that's very hard for them to do.

Low tariff institution

- 4.77. However, institutions argue this does not negate the individual and wider benefits of the HE experience. The Vision West Nottinghamshire College case study explores the impact of HE delivered through the FE model, where many students have a transformative experience beyond economic benefits.

- 4.78. It is important for these institutions to capture this impact with alternative measures. Understanding distance travelled and the value added for these students is arguably more important than simple employment and earnings outcomes. For example, one of the lower tariff institutions that participated in this project, which has high proportions of WP students and mature students, reports that 6 per cent of their undergraduate students come with prior work experience. On leaving, this has increased to 48 per cent. This alone is felt to be an important way in which the university contributes to improving the life chances of their students. They are keen to increase this percentage and are exploring ways to provide the option of work-based learning or a placement year for all courses. Another institution highlighted the problems of comparing outcomes between institutions without contextual information on student starting points. Referring to the proportion of students graduating with higher classifications of degree, the institution said:

... people go 'that's really not very good', well it is depending on where the student came from [...] I'm not miffed because most of our students don't come in with triple As so I have a different starting point. [...] can we use a

more nuanced indicator that maybe reflects the portfolio or the mix of students coming in?

Specialist institution

- 4.79. Measuring learning gain – how much students in HE learn and the contribution that institutions, courses and activities make to learning – is a potential way to address these concerns. HEFCE have invited institutions to participate in pilot studies to explore a range of measures of learning gain.¹⁰³
- 4.80. Again, suitable comparator groups or data would also be beneficial in these circumstances to demonstrate outcomes for groups of potential HE students from disadvantaged backgrounds or particular neighbourhoods who could but do not engage in HE.
- 4.81. Institutions perceive that the impacts of HE, particularly on those from disadvantaged backgrounds or communities, may be passed on and multiplied through future generations. Young people's educational aspirations are strongly correlated with those of their parents and peers and educational and career aspirations developed during adolescence can have lifelong significance.¹⁰⁴ Research carried out by the University of Essex on behalf of the Sutton Trust found that children of degree-educated parents were more likely to gain good GCSEs. And although the advantage of having highly educated parents has diminished for the current generation, stark achievement gaps remain.¹⁰⁵
- 4.82. Where the focus of evaluations of impact lies is likely to be dependent on the context of the institution and how they see their role in terms of benefitting students, the local, national or international communities. Different measures will be needed depending on whether the focus is on macro-economic, social or individual benefits.
- 4.83. Our review of the literature on wider social and community impact for students reported in Chapter 3 shows there is evidence to suggest that HE can have a positive impact on individuals in terms of civic engagement and health. Institutions are aware of this research and have bought into the notion that HE can have these wider effects. However, this kind of information on impact is outside what they know about their alumni and not within their ability to evidence.

¹⁰³ For further information see: <http://www.hefce.ac.uk/lt/lg/>

¹⁰⁴ Social Exclusion Task Force (2008) *Aspiration and attainment amongst young people in deprived communities – Analysis and discussion paper* Cabinet Office
http://webarchive.nationalarchives.gov.uk/20090114000528/http://cabinetoffice.gov.uk/media/109339/aspirations_evidence_pack.pdf (Accessed: May 2015)

¹⁰⁵ The Sutton Trust (2010) *Educational Mobility in England* the Sutton Trust http://www.suttontrust.com/wp-content/uploads/2010/04/Education_mobility_in_england.pdf (Accessed: May 2015)

Wider social and economic benefits

4.84. The presence and actions of students may be seen to have a positive impact on local communities, and this was highlighted in particular by more inclusive institutions with larger proportions of WP students. For example, one highlighted the impact of the amount of volunteering hours provided by students and the money raised for charities. These activities also benefit students, providing them with valuable experiences and enhancing employability as well as benefiting the community.

4.85. One institution argued that the presence and activities of WP students result in an improved student experience and challenge the perspectives of their students. The local black and minority ethnic (BME) population is low at about 1 per cent, but amongst the university student population it is 12 per cent, meaning students from the local area are likely to experience increased diversity on campus compared with the wider community:

60 per cent of our students come from the [local] region [...] with 1 per cent of BME people in the neighbourhood. You then come to somewhere where you are more exposed to people with a whole range of different backgrounds, different challenges. That in itself is a mind opening benefit, and is impactful I would say.

Low tariff institution

4.86. Furthermore, this institution argues that an institution such as theirs, with high numbers of WP students, offers greater opportunity for connecting with people from other backgrounds than more selective institutions with less student diversity.

4.87. Institutions are increasingly engaging with employers and Local Economic Partnerships (LEPs) to support local economic development plans and ensure they are contributing to the skills needs of the area. We found a number of examples of institutions with higher proportions of WP students working in partnership with local employers and LEPs. For example, a lower tariff institution based in an area of the country with high levels of small and medium-sized enterprises (SME) is working with a major bank to promote local employment opportunities and the advantages of working with SMEs. They have also launched a graduate recruitment service, which includes an internship programme that is aimed at SMEs. These activities are said to help the institution better understand the needs of the local SME labour market.

4.88. Another institution with a strong WP focus and high proportions of students from disadvantaged backgrounds has opened a science park. The LEP has identified STEM as key to their local growth plan. The science park is argued to provide benefits for both businesses located there and students attending the university (degrees in engineering, natural sciences, computer science and maths are taught on site). As well as accommodation and specialist on-site facilities, businesses can access the knowledge and expertise of academics. The site also gives students access to internships and work

opportunities. Companies from the science park also get involved in outreach activities to promote STEM and HE progression locally. Another faculty at this institution has recently become the base for a new regional industry-specific research and development centre. The state-of-the-art facility provides a centre of excellence for producers across the region.

- 4.89. Institutions are keen to demonstrate the impact they have on the local economy. Some have commissioned work to estimate the value of this impact. For example, one institution interviewed estimates that the institution contributes £298 million per year to their region. A selective institution from our sample has also conducted an economic impact study. This estimates that the university contributes £590 million to the UK economy. The analysis considers the impact of employment at the university, revenue spending and the off-campus spending of students. Estimates such as these are an effort to reflect the wider benefits of universities as institutions, although it should be noted that the methodologies applied are not consistent and so these figures are not comparable. WP is only one part of this impact, and the estimates we have seen do not attempt to identify the specific contribution of WP or the economic impact of having a more diverse student body.

Breadth and depth of impact

- 4.90. Institutions were able to describe a wide range of impacts that they perceive could be attributed to WP activities and spend, as demonstrated in this section, that go beyond the economic benefits to the individual. The case studies describe some of these impacts in detail, showing how contextual factors such as the mission, size and location of the institution impacts on WP delivery, on student outcomes and the ultimate impacts achieved.
- 4.91. The work that institutions carry out to support students to graduation and into the world of work was explored in the case study on Liverpool John Moores University. The university has found that increasing students' employability skills, and in particular encouraging them to be reflective about their abilities and future career, coupled with activities involving local and national employers, empowers students, giving them the confidence to pursue the right career for them. The North West is a competitive area for graduate roles, with a large number of HE institutions and a limited number of graduate opportunities. However, the university is seeing an improvement in the proportion of graduates achieving professional and managerial roles six months after graduation (as reported in the DLHE).
- 4.92. FE colleges reach a high proportion of WP students and are able to offer the ability to study HE to students that might not otherwise choose to go, being more accessible, local and affordable. Vision West Nottinghamshire College is located in an area surrounded by low participation neighbourhoods, traditionally with high levels of unemployment. It is reaching a growing number of students who are able to study in small classes, with individualised support from tutors. We also have prepared case studies of Hull College and Bradford College. The impact that colleges have as anchor institutions in their area and the way they work in collaboration with other institutions is described in these case studies,

further demonstrating the impacts that colleges have on both their local areas and for WP students.

4.93. The broader impact of specialist institutions – that is, the impact the institution has in their area of expertise – has been explored in some detail elsewhere, such as the analysis of the impact of graduates from the arts.¹⁰⁶ However, the impact that can be attributed to WP spend or activities, is less well understood. The case study focusing on the work of Trinity Laban demonstrates the impact that an institution can have on its surrounding area, as well as the highly specialised outreach work that they carry out, engaging individuals in the arts even if they do not progress to an arts institution or to HE at all. The impact of arts organisations goes beyond the economic benefits to the individual or society, with the institution and graduates contributing to society through cultural and creative endeavours. However, quantifying this impact and assessing the contribution that WP spend makes is difficult given the issues with defining and measuring these types of impact.

4.94. The value of longitudinal tracking is demonstrated in the University of Kent case study, alongside the effectiveness of outreach as a framework of activities rather than individual, ad hoc interventions. The development of HEAT and the use of individualised tracking data show how institutions are able to demonstrate some level of impact through consistent and longitudinal data collection. HEFCE is providing funding to facilitate a roll-out of the service. Currently 31 institutions use the service and membership is growing rapidly.¹⁰⁷ It demonstrates how institutions can lead on evaluation methodologies that could contribute to the evaluation framework. Extending the approach further so that longitudinal data could be used at a national level should be considered as a sustainable (given it is sector-led) approach to evaluation.

Barriers and enablers to better evaluation by institutions

4.95. There is a desire by institutions for WP work to become more evidence based through carrying out better evaluations and to use evidence to inform decision-making and delivery. However, whilst some examples of successful evaluation were discussed, these were small in scale and difficult to replicate nationally.

4.96. One approach to improving the quality of the evaluations carried out across the sector is to standardise data collection and analysis. This would allow for standard outcome measures to be put in place. The diversity of the interventions taking place, further complicated by the diversity in institution mission, vision, values and context suggests that a standardised approach may only be appropriate at a certain level. Such an approach is

¹⁰⁶ Ball, L. Pollard, E. Stanley, N. (2009) *Creative Graduates*, Creative Futures Council for Higher Education in Art and Design <http://www.employment-studies.co.uk/resource/creative-graduates-creative-futures> (Accessed: May 2015)

¹⁰⁷ Further information available here: <http://www.hefce.ac.uk/sas/heat/> (Accessed: May 2015)

also unlikely to be able to answer more contextualised questions about what works in what circumstances. An approach to collecting data in a standardised data return is explored in more detail in the sister project.¹⁰⁸

4.97. Collecting individual-level data is another approach that could improve analysis. This would require the right tools to be in place (such as HEAT) to enable the necessary data to be collected, shared and analysed. Again, the extent to which this data could be used to provide evidence of what works, particularly for embedded activities and sustained long term packages or programmes of interventions, would need to be explored.

4.98. Institutions require resources, time and expertise to carry out further evaluative activities. At some institutions, there is a need for additional support to grow their expertise in carrying out evaluative activities. Justifying the cost of evaluation can be difficult within these institutions as it is often not a priority, as demonstrated by this institution:

In the general scheme of life you crack on and do your job, don't you? That's where the money is, to support the students and to support the staff to support the students. It's very difficult to justify some money to go into what effectively is a tracking piece of work.

Low tariff institution

4.99. The benefits of evaluating WP activities appear not to be appreciated equally across the sector. This means further work may be required, focusing on some institutions to develop their knowledge about the benefits of evaluation and to grow their expertise. Even so, providing evaluation resource may still be a challenge for smaller institutions, with small numbers of staff managing multiple processes and priorities. Collaboration with other institutions to carry out evaluations could be a solution, as demonstrated by HEAT. However, the collaboration required to ensure similar data collection and to provide access to information may also be a challenge now that institutions are much more competitive and therefore protective of recruitment and retention data.

¹⁰⁸ CFE Research (2015) *Student Opportunity outcomes framework research programme: Data return project*. Bristol: HEFCE

05. APPROACHES TO EVALUATION

This chapter describes approaches to evaluation in other sectors that can help inform the evaluation of WP. It also describes some new and emerging sources of data in the HE sector that could be used for evaluation.

Approaches to impact measurement

- 5.1. This section briefly introduces current approaches to evaluation and impact evaluation. Below we provide examples of different approaches, identify good practice in impact evaluation and discuss some of the challenges with these methods

Social Impact Measurement

- 5.2. The European Single Market Act II described how the European Commission would develop a methodology to measure the socio-economic benefits created by social enterprises, on the basis that ‘The development of rigorous and systematic measurements of social enterprises’ impact on the community [...] is essential to demonstrate that the money invested in social enterprises yields high savings and income.’¹⁰⁹ As a result, the Social Impact Measurement sub-group was set up in October 2012 to agree upon a methodology that could be applied across the European social economy.¹¹⁰ The Impact Measurement Working Group (IMWG) aims to agree key principles and approaches and to provide relevant examples of good practice in impact measurement to the Social Impact Investment Taskforce. The working group comprises private investors, academics and non-profit organisations to represent diverse sectors, and includes national advisory boards in each of the G8 nations. The working group’s definition of impact is:

The reflection of social [and environmental] outcomes as measurements, both long-term and short-term, adjusted for the effects achieved by others (alternative attribution), for effects that would have happened anyway (deadweight), for negative consequences (displacement), and for effects declining over time (drop-off)¹¹¹

¹⁰⁹ European Commission (2012) *Single Market Act II: Together for new growth* Brussels p.16
http://ec.europa.eu/internal_market/smact/docs/single-market-act2_en.pdf (Accessed: April 2015)

¹¹⁰ European Commission (2014) *Social Impact Measurement sub-group*
http://ec.europa.eu/internal_market/social_business/expert-group/social_impact/index_en.htm (Accessed: April 2015)

¹¹¹ IMWG (2014) *Measuring Impact* p27
<http://www.socialimpactinvestment.org/reports/Measuring%20Impact%20WG%20paper%20FINAL.pdf> (Accessed: April 2015)

5.3. The group has produced a number of documents, including Seven Guidelines for Good Impact Measurement Practice.¹¹² In summary, the seven guidelines are:

- set goals
- make data-driven investment management decisions
- report data
- develop framework and select metrics
- collect and store data
- validate data
- analyse data.

5.4. Whilst the focus of the IMWG is on the impact of social investment, its definition of impact and its guidelines for measurement may provide a model for exploring the impact of WP in the UK.

Evaluation for policy-making

5.5. Within the UK, official guidance on evaluation design is provided in the form of two complementary documents from the government: the Green Book sets out guidance on the economic principles of appraisal and evaluation, whilst the Magenta Book offers guidance on evaluation for policy-making. The Magenta book states that 'evaluation examines the actual implementation and impacts of a policy to assess whether the anticipated effects, costs and benefits were in fact realised.'¹¹³ The Magenta Book is divided into two parts, the first of which sets out for policy makers what evaluation is, what makes for a good evaluation, and how to interpret evaluation results. In contrast, Part B is aimed at analysts, and provides a more technical discussion of the key stages of planning and undertaking an evaluation. Stages prior to conducting an evaluation include identifying the audience, formulating research questions, selecting the evaluation methodology and identifying the data requirements. The first stage involves the development of a logic model, which identifies a causal chain that links the intended impact back to the initial conditions and the proposed (or enacted) activities.

¹¹² IMWG (2014) *Measuring Impact: Guidelines for good impact practice* http://www.thegiin.org/binary-data/GIIN_impact_measurement_guidelines.pdf (Accessed: April 2015)

¹¹³ HM Treasury (2011) *The Magenta Book: Guidance for evaluation* p7 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220542/magenta_book_combined.pdf (Accessed: April 2015)

5.6. Logic models are related to the Theory of Change evaluation methodology, which was developed in the 1990s to assess the impact of social programmes. For example, this methodology has been adopted as part of the UK's programme of international development since 2010.¹¹⁴ Whereas a logic model generally works in the direction of causality, working from actions to effects, the Theory of Change approach starts from the intended outcomes and works backwards to identify the necessary conditions for success. This approach includes indicators in its causal chains to measure the strength and direction of the programme's outcomes, and thereby contribute to an evaluation of a project's impact. There are risks in this approach, however, such as developing a model that is not plausible or is not measurable. In both cases, it may be possible to develop a logic model (that is, to work forwards instead of backwards) to identify the relevant causal chain and to highlight potential measurable indicators. The quality of a Theory of Change approach rests on:

- the consideration of uncertainties and the accommodation of uncertainties
- making assumptions explicit, in order to develop a plausible and effective causal model
- having the time and resources to allow the model to inform and be informed by all relevant participants.¹¹⁵

5.7. Theory of Change is best understood as both a process and a product. Its value is that it allows for a flexible way to approach complex and uncertain situations by understanding the processes involved, which thereby allows for the development of better hypotheses and potentially more successful outcomes.

5.8. Supplementary guidance to the Magenta book¹¹⁶ provides further guidance on quality in the design of impact evaluations. The guidance sets out the pros and cons of different research designs and groups these according to how strong they are in attributing impact to interventions or policies. Strong research designs are:

- random allocation/experimental methods
- intervention group vs. well matched counterfactual, and
- strong difference-in-difference design.

¹¹⁴ Vogel, I. (2012) *Review of the use of 'Theory of Change' in international development*
http://r4d.dfid.gov.uk/pdf/outputs/mis_spc/DFID_ToC_Review_VogelV7.pdf (Accessed: April 2015)

¹¹⁵ Ibid p5

¹¹⁶ Campbell, S. and Harper, G. (2012) *Quality in policy impact evaluation* HM Treasury

5.9. Weaker or riskier research designs for measuring attribution are listed as:

- intervention group vs. unmatched comparison groups
- predicted vs. actual, and
- research designs with no comparison group.

5.10. This grouping of strong and weaker research methods has much in common with other hierarchies of evidence that tend to place RCTs near the top and case studies at the bottom.¹¹⁷ However, as the Magenta Book points out, impact evaluations are not always practical or feasible. Circumstances when an impact evaluation is less feasible include: when there is a complex or distant relationship between outcomes of interest and interventions, with lots of confounding factors; when data to support an evaluation is not collected until a policy is already established; or when allocation of resource or intervention is optimally targeted, leaving no equivalent comparison group.¹¹⁸

5.11. Petticrew and Roberts¹¹⁹ argue that instead of a hierarchy of evidence, different approaches are more or less appropriate depending on the research question being asked. They suggest instead a matrix as a way of appraising evidence. In their paper for the Alliance for Useful Evidence, Nutley et al.¹²⁰ present an adapted version of such a matrix, replicated in Table 3.

Table 3: A matrix of evidence to appraise evidence

	Qualitative research	Survey	Case-control studies	Cohort studies	Randomised Control Trials	Quasi-experimental studies	Non-experimental studies	Systematic reviews
Does doing this work better than doing that?				+	++	+		+++
How does it work?	++	+					+	+++
Does it matter?	++	++						+++

¹¹⁷ Nutley, S. Powell, A. and Davies, H. (2013) *What counts as good evidence* Alliance for Useful Evidence <http://www.alliance4usefulevidence.org/assets/What-Counts-as-Good-Evidence-WEB.pdf> (Accessed: April 2015)

¹¹⁸ HM Treasury (2011) *The Magenta Book: Guidance for evaluation* p101

¹¹⁹ Petticrew, M. and Roberts, H. (2002) Evidence, hierarchies, and typologies: horses for courses *Journal of epidemiology and community health* 57: 527-529 <http://jech.bmj.com/content/57/7/527.full.pdf+html> (Accessed: April 2015)

¹²⁰ Nutley, S. Powell, A. and Davies, H. (2013) *What counts as good evidence* Alliance for Useful Evidence.

Will it do more good than harm?	+		+	+	++	+	+	+++
Will service users be willing to or want to take up the service offered?	++	+			+	+	+	+++
Is it worth buying this service?					++			+++
Is it the right service for these people?	++	++						++
Are users, providers and other stakeholders satisfied with the service?	++	++	+	+				+

- 5.12. Nutley et al. also recognise the practical constraints of only considering highest quality evidence, when some useful practices may not yet be fully evidence-based. It may therefore be useful to consider where a particular practice or programme is on the 'evidence journey' from early findings to substantive bodies of knowledge. Depending on the purpose of the evidence, good enough evidence may be acceptable in the absence of strong evidence.

Educational Effectiveness Research

- 5.13. Educational effectiveness research (EER) aims to understand the factors and interactions that have an influence on the effectiveness of classrooms, schools and education systems.¹²¹ It is a field of study with roots in the 1970s, developed as a reaction to the sociological viewpoint epitomised by Bernstein's claim that 'education cannot compensate for society'.¹²² EER built up its position based on an accumulation of evidence that different schools and educational conditions do have an effect on performance and outcomes. Central issues for investigation include those related to educational equity and the differential effects of education on different groups of pupils and students. The field of EER still generates lively debate, as evidenced by the critiques¹²³ and counter-critiques¹²⁴ in educational research. Current arguments centre on the problems of measurement, analysis and interpretation of research into educational effectiveness, and are closely enmeshed with views on systems of school performance monitoring and the league tables that they contribute to. Areas of debate include methodological rigour (particularly around Contextual Value Added analysis), the size of school effects in educational outcomes (with claims ranging between 10% and 50%), the validity or usefulness of the findings, and how those findings can or should be applied to educational practices and systems.

¹²¹ Reynolds, D. Chapman, C. Kelly, A. Muijs, D. and Sammons, P. (2012) Educational effectiveness: the development of the discipline, the critiques, the defence, and the present debate *Effective Education* 3(2): 1–19. [http://eprints.soton.ac.uk/372453/1/Reynolds%20et%20al\(2012\)%20Educnl%20effectvns-developmt%20of%20discipline.pdf](http://eprints.soton.ac.uk/372453/1/Reynolds%20et%20al(2012)%20Educnl%20effectvns-developmt%20of%20discipline.pdf) (Accessed: April 2015)

¹²² Bernstein, B. (1970) Education cannot compensate for society *New Society* 15(387): 344–347.

¹²³ For example, Gorard, S. (2010) Serious doubts about school effectiveness. *British Educational Research Journal*, 36(5): 745–766. http://beraconference.co.uk/index.php/download_file/view/39/75/ (Accessed: April 2015)

¹²⁴ For example, Muijs, et al. (2011) The value of Educational Effectiveness Research – a Response to Recent Criticism *Research Intelligence* 114(24): 24–25 and Reynolds et al. (2012). Educational effectiveness: the development of the discipline, the critiques, the defence, and the present debate. *Effective Education*, 3(2): 1–19.

Approaches to evaluating effectiveness and impact in other sectors

- 5.14. To help inform our thinking and recommendations to HEFCE of potential improved ways of evaluating the effectiveness and impact of WP we considered how these issues are addressed in other sectors, and what might be transferable to the HE sector and the evaluation of WP. Below we summarise interesting and promising approaches from the What Works Network and Data Labs.

The What Works Network

- 5.15. The What Works Network is a new initiative designed to build upon existing evidence-based policy making to guide decision making in public services. Each What Works Centre that form part of the network is designed to produce and disseminate research to local decision makers, supporting them to invest in services that deliver the best outcomes for citizens and value for money for tax payers.¹²⁵
- 5.16. The network has been developed in recognition of the value of informing public decision making and spending through robust evidence. The extent to which public services are based upon strong evidence, however, is historically uneven. In medicine, for example, the UK has a long-standing culture of using robust evidence to inform commissioning and clinical decisions, through the National Institute for Health and Clinical Excellence. The What Works Network represents the government's intention to expand this culture into other areas of social policy, drawing on the expertise and experience of key stakeholders and end users.¹²⁶
- 5.17. The What Works Network is currently comprised of seven What Works Centres:
- National Institute for Health and Care Excellence
 - Educational Endowment Foundation/Sutton Trust
 - College of Policing What Works Centre for Crime Reduction
 - Early Intervention Foundation
 - What Works Centre for Local Economic Growth
 - Centre for Ageing Better

¹²⁵ Cabinet Office (2013) *What works: evidence centres for social policy*
<https://www.gov.uk/government/publications/what-works-evidence-centres-for-social-policy> (Accessed: April 2015)

¹²⁶ Ibid.

- What Works Centre for Wellbeing.

5.18. The centres are funded by both government and non-government organisations, including the Economic and Social Research Council and the Big Lottery Fund. The centres help to ensure that thorough, high quality, independently assessed evidence shapes decision-making at every level, by:

- Collating existing evidence on the effectiveness of policy programmes and practices
- Producing high quality synthesis reports and systematic reviews in areas where they do not currently exist
- Assessing how effective policies and practices are against an agreed set of outcomes
- Sharing findings in an accessible way
- Encouraging practitioners, commissioners and policy-makers to use these findings to inform their decisions.

5.19. The national strategy for access and student success¹²⁷ describes the need to demonstrate the impact of WP at both a national and local level. Institutional policy decisions are currently made without understanding based on evidence of the relative effectiveness of interventions. There is scope to systematise how best practice is shared across the sector, particularly if existing evidence could be collated and a core set of measures of effectiveness established. A What Works Centre for participation and success in HE could provide the necessary focus for this type of activity. We explore in further detail below the work of one of the What Works Centres – the Education Endowment Foundation, which provides some potentially useful approaches that could be adapted by the HE sector.

Organisation Profile – Education Endowment Foundation

Founded: April 2011

Organisations involved: The Sutton Trust, Impetus Trust (now Impetus – the private equity foundation)

Funding sources: Department for Education, fundraising, charitable donations and investment income.

Budget: Initial £125m grant; £200m total to be awarded over the 15 year lifespan of the organisation (in 2013/14, £7.7 million was awarded to projects and £2.1 million to evaluation and research).

Evaluation methods used: Independent evaluation; randomised control trials where possible.

¹²⁷ HEFCE and OFFA (2014) *National strategy for access and student success in higher education* Department for Business Innovation and Skills https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299689/bis-14-516-national-strategy-for-access-and-student-success.pdf (Accessed: April 2015)

The Education Endowment Foundation

- 5.20. Arguably of greatest relevance to WP in HE, the Education Endowment Foundation (EEF) works to break the link between family income and educational achievement, ensuring that children from all backgrounds can fulfil their potential and make the most of their talents. The EEF's role is to identify, fund, develop, support and evaluate projects to raise the achievement of disadvantaged children in the country's most challenging schools. The EEF is particularly focused upon innovation, and scaling up interventions and projects that are cost effective and replicable. Part of its mission is to use robust evidence to help schools spend money effectively, and to improve teaching resources for children from low income families.
- 5.21. The EEF's target beneficiaries are school pupils eligible for free school meals attending primary and secondary schools eligible for EEF funding. These are schools that are below the government's floor standards at Key Stage 2 or 4. A wide range of organisations can apply for funding from the EEF however, including registered charities, not-for-profit organisations, local authorities, individual schools or clusters of schools (including those not considered to be EEF target schools), colleges and academies. The funded projects are designed to have measurable impacts, on attainment or other directly related outcomes, that fit into one of four broad approaches, including: testing and incubating new ideas which are supported by evidence; bringing initiatives from other contexts to EEF target students and schools; scaling up initiatives which have been proven to work on a modest scale; and developing projects with potential that have not, to date, been delivered or evaluated effectively.
- 5.22. Currently the EEF funds a total of 91 interventions, across primary and secondary schools in England and Wales. Each intervention is listed on the EEF website with detailed information presented in a standard format, including timescales, funding, and existing evaluation studies and commentary.
- 5.23. Evidence on the effectiveness of projects is shared through the Teaching and Learning Toolkit, which summarises educational research from the UK and internationally. The toolkit is designed to act as an accessible summary of educational research, providing practical guidance for teachers and schools to improve the attainment of disadvantaged pupils.
- 5.24. The rationale for the toolkit is based on the notion that school spending on initiatives focused on improving pupil attainment is complex, and the impact of investments is determined by a wide variety of factors. Visualising possible interventions in a simple comparative format helps schools to more effectively determine their strategy. The toolkit uses three key indicators to help education professionals make informed decisions: average impact, cost and evidence.

- 5.25. For each intervention, an estimate of average impact is provided. Impact is measured in terms of the number of additional months progress that pupils would be expected to make as a result of the intervention or approach adopted (using average pupil progress over one year as a hypothetical benchmark). This is based upon quantitative measures gathered from research through systematic reviews and meta-analyses, as well as research that the EEF commissions.
- 5.26. Average impact is calculated using an effect size. Effect size provides a quantitative measure of how well an intervention has been found to work, and is often gathered from studies that use control groups, or another form of comparison. The EEF toolkit translates the effect size of a given intervention into school months progress which offers a meaningful way for practitioners to interpret the data. Using one measure of effectiveness in this way also allows different interventions to be compared. The EEF notes that there are some issues with using this measure. Effect sizes and what could be considered typical for one year's progress changes with pupil age. By secondary school age, an additional month's progress may be considerably different to that seen in younger age cohorts.
- 5.27. The toolkit also provides cost estimations for each intervention, based on the approximate cost of implementing an approach in a class of 25 pupils. These costs may refer either to the cost of additional resources, or the necessary training or professional development overheads required.
- 5.28. Assessments of the quality of available evidence for the impact of an intervention are a key part of the toolkit. Data is sourced from a range of different types of study, many of which with overlap methodologically. Some of the common sources of evidence used for the toolkit include:
- Effectiveness trials – large scale trials designed to test an intervention's effectiveness in a large sample of schools
 - Efficacy trials – large scale studies that test the viability of an intervention under ideal or developer-led conditions
 - Impact evaluations – studies designed to identify the extent and nature of differences in outcomes and effects achieved by an intervention versus a counterfactual scenario
 - Systematic reviews – synthesis of research evidence on a given topic, selected using specific criteria or parameters
 - Meta-analysis – systematic analysis of several studies of one intervention in order to produce a quantitative estimate of effect size.

5.29. As for effect size and cost, a graphical rating scale provides an accessible summary of the amount of available evidence (that is, the number of systematic reviews or meta-analyses) and the quantity of primary studies that are synthesised within these. The scale is also weighted to take into account the reliability or consistency of the impact noted across the studies that are reviewed.

5.30. Combined together, these indicators form a framework through which to compare and weigh up the potential value of interventions. The toolkit allows practitioners to sort and filter the interventions by each of these parameters, and each intervention has a detailed summary, including videos, help sheets and links to available evidence and studies. Information is presented in a standard way for each intervention.

5.31. While the teaching and learning toolkit provides a simple interface through which to assess and weigh-up the value of different types of intervention, it is important that educational practitioners consider the nature of each intervention in context. The findings of the toolkit may be problematic for some types of intervention, particularly if the intervention is politically sensitive or seen as highly valuable by society. For example, evidence gathered on the value of teaching assistants, while robust, caused controversy in the education sector by suggesting that teaching assistants do not significantly advance the learning of children in schools. Such statements may hold water within the confines of a research study or meta-analysis, but may be practically unhelpful for other reasons – for example, the teaching assistant role is seen as valuable across the education sector, and its effect size in terms of learning advancement is not the sole justification for its use. The EEF continually updates available evidence and recent findings on teaching assistants are very positive.¹²⁸

5.32. Issues such as this are an inherent problem with ranking different types of intervention (some in existence for long periods of time) on three key criteria only. Therefore, if adopting this approach HEFCE would need to ensure that assessment criteria are appropriately weighted and contextually explained.

Data Labs

5.33. Another approach with potential lessons for evaluating impact of WP is the 'Data Lab' as developed by New Philanthropy Capital (NPC). The Data Lab project is a four year initiative funded by the Oak Foundation designed to support community and not-for-profit organisations to evaluate the impact of their work. The Data Lab approach comprises identifying project beneficiaries in government held data sets, constructing a comparison group and using this to compare the outcomes of treatment and non-treatment groups. The

¹²⁸ Ward, H. (2014) *Workforce – Teaching assistants do make a difference* TES Connect <https://www.tes.co.uk/article.aspx?storycode=6400487> (Accessed: April 2015)

results of the impact evaluation should then be shared across the sector to build a body of evidence.¹²⁹

5.34. The first Data Lab set up is the Justice Data Lab. Set up by the Ministry of Justice in 2013, the Lab provides organisations working with offenders access to central data to enable them to evaluate the impact of their work on reoffending rates.¹³⁰ First, organisations send a request to the Data Lab. Organisations provide information about their intervention details of the offenders they have worked with. Identifying data such as name, date of birth and gender is required to match records with administrative data; Police National Computer Identifier and prison number also help to support this process. Organisations are also asked to supply start and end dates and location (community or prison) or the intervention. It is up to the community organisations to ensure they meet the requirements of the Data Protection Act 1998 (for example, by obtaining express consent of individuals to share their data). The cohort of beneficiaries must be a minimum of 60 individuals to ensure that results are statistically robust.¹³¹

5.35. From their administrative data the Ministry of Justice constructs a matched control group of offenders with similar characteristics and sentences to the group of offenders who received the intervention (treatment group). One-year proven re-offending rates and frequency of re-offending are calculated for the treatment and control groups. A statistical comparison is carried out and conclusions drawn on whether the intervention is associated with a change in offending behaviour. The analysis is compiled in a report.

Organisation Profile – New Philanthropy Capital

Founded: 2002

Purpose: NPC is a charity think tank and consultancy, supporting charities and funders to achieve the greatest possible impact.

Mission: Increase the impact of charities; increase the impact of funders; strengthen the partnership between charities and funders.

Activities: As a consultancy, NPC works with charities, foundations, businesses, government and individuals to help them overcome obstacles to effectiveness.

As an independent think tank for the charity sector they identify the obstacles preventing the charity sector from maximising impact and develop, explore and test solutions to overcome them.

¹²⁹ Gyateng, T. Pritchard, D. and de Las Casas, L. (2013) *Creating a 'Data Lab' – increasing not-for-profit organisations' access to, and demand for, data for impact measurement* London: New Philanthropy Capital <http://www.thinknpc.org/publications/creating-a-data-lab/> (Accessed: April 2015)

¹³⁰ Ministry of Justice (2014) *Accessing the Justice Data Lab Service* Ministry of Justice <https://www.gov.uk/government/publications/justice-data-lab> (Accessed: April 2015)

¹³¹ Ministry of Justice (2014) *Justice Data Lab – User Journey Document* Ministry of Justice

- 5.36. The report is designed to be clear and easy to understand and includes information on what can and cannot be said based on the statistical evidence and caveats and limitations. Once a report is finalised it is published by the Ministry of Justice in the interests of transparency.¹³² The Justice Data Lab won the 2014 Royal Statistical Society Award for Statistical Excellence in Official Statistics.¹³³
- 5.37. NPC are working to develop further Data Labs in the area of employment/benefits, health, substance misuse and education.¹³⁴
- 5.38. There are clear benefits to this approach – government data (and other centrally-held administrative data) can be used securely and robustly to provide good evidence of associations between interventions and impact as measured by key outcomes (such as reduced reoffending). However, the Justice Data Lab pilot has also highlighted barriers. There are legal, technical, resource and attitudinal barriers to the supply of individual level data: appropriate data sharing gateways are needed, data may be held in different places and some government bodies may be resistant to allowing access to their data. NPC also recognises there are demand side barriers from not-for-profit organisations too. As well as technical and legal issues, the requirement for transparency means there is a reputational risk for organisations if their intervention is not found to be associated with the desired outcomes. On both the demand and supply side, resources are needed to address the barriers identified.¹³⁵

Additional data sources from the HE sector

- 5.39. Our desk research and fieldwork have both demonstrated the value of exploiting existing datasets for evaluating the impact of WP activities, particularly from the point of view of the practitioners in institutions who have little available resource for carrying out evaluations. The ‘data lab’ example demonstrates some of the ways in which centralised, linked data can be used to evidence impact. Existing data such as schools data which could be used to define WP entrant populations and student loans information, providing income and loan repayments, could be linked to existing HE datasets, providing a central set of information that could be used for research.
- 5.40. Further uses of existing data are also possible. FE institutions do not provide data to the Higher Education Statistics Agency (HESA), instead including HE students on their FE

¹³² Ibid

¹³³ Royal Statistical Society (2014) *Society announces winners of RSS Statistical Excellence Awards*. <http://www.statslife.org.uk/news/1627-society-announces-2014-winners-of-excellence-awards> (Accessed: April 2015)

¹³⁴ NPC (2015) *Data Labs* [Online] <http://www.thinknpc.org/our-work/transforming-the-sector/data-labs/> (Accessed: April 2015)

¹³⁵ Gyateng, T. Pritchard, D. and de Las Casas, L. (2013) *Creating a ‘Data Lab’ – increasing not-for-profit organisations’ access to, and demand for, data for impact measurement* London: New Philanthropy Capital

returns. This means that benchmarking data that is available to the rest of the sector (like the UK performance indicators) does not include FE data. The retention indicator in the UK PIs includes figures on transfer to other HEIs but currently does not take into account transfer to FE colleges, meaning some of the impact of FE is not captured by the current reporting mechanisms.

5.41. There are also some additional sources of data for HE that are likely to be available in the near future. The UK PIs were reviewed in 2013, with changes due to be implemented in 2014.¹³⁶ These have been recognised as a valuable source for benchmarking WP work and changes could lead to a greater wealth of indicators for this purpose. A second set of data that is due to be introduced in future is learning gain indicators. A report on learning gain (not yet published at the time of writing) was commissioned by HEFCE and approaches to learning gain will be explored by a pilot group of institutions over the next three years. Learning gain has been defined as ‘distance travelled’ for an individual between two points in time, for example entry to HE and graduation. Measures of learning gain coupled with student WP indicators could be used to demonstrate the impact of WP interventions on student success.

5.42. Another potential source of data in the future is the Assessment of Higher Education Learning Outcomes (AHELO). AHELO is an OECD programme to develop a global measure of student outcomes – what they know and can do on graduation. The OECD already provides an international comparative measure of achievement of 15 year olds in the form of the Programme for International Student Assessment. AHELO is an HE level equivalent, offering the potential for HEIs to benchmark their students’ achievements with other institutions across OECD member nations.¹³⁷

5.43. An initial feasibility study for AHELO was completed in 2012.¹³⁸ This developed and assessed assessments in generic skills and discipline specific knowledge and skills in the fields of economics and engineering. Contextual data on students, faculties and institutions was also collected through surveys. The feasibility report concluded that it was possible to develop assessment instruments that produced reliable and valid results across countries, languages, cultures and institutions. However, concerns have been expressed about the endeavour, including whether the results will be used for to rank institutions, and the difficulties inherent in making appropriate comparisons between potentially highly diverse institutions.

¹³⁶ Further information about the UK PI review: <http://www.hefce.ac.uk/pubs/rereports/year/2013/ukpireview/#d.en.85232> (Accessed: May 2015)

¹³⁷ OECD (2014) *Testing student and university performance globally* [online] <http://www.oecd.org/edu/skills-beyond-school/testingstudentanduniversityperformancegloballyoecdshelo.htm> (Accessed: May 2015)

¹³⁸ OECD (2013) *Assessment of Higher Education Learning Outcomes Feasibility Study Report, Volume 2 – Data Analysis and National Experiences, Executive summary* OECD <http://www.oecd.org/edu/skills-beyond-school/AHELO%20FS%20Report%20-%20Volume%202%20Executive%20Summary.pdf> (Accessed: May 2015)

- 5.44. The OECD has asked member nations to indicate by 31 May 2015 whether they wish to take part in a full main study.¹³⁹ How this information could be used locally and whether it could be used for WP evaluation purposes is something that could be explored further after the roll-out is completed, should England opt into the study.

Summary

- 5.45. The measurement of impact is most robustly carried out using strong research designs like RCTs or studies using comparison groups. However, these approaches may not be the most appropriate for capturing the full extent of WP impact and some embedded or long-standing WP activities are less amenable to impact evaluation.
- 5.46. The debate around education effectiveness research, and in particular measurement, interpretation and analysis of effectiveness and how it should be applied to practice, demonstrates further the difficulties in this area.
- 5.47. Successful evaluations have been carried out in other sectors as demonstrated by the What Works Network. The EEF is an interesting example from the education sector, where a toolkit has been developed for sharing evaluation results and evaluative activities and research projects are funded. Questions about how evaluations of WP activities might be funded and how the outputs might best be shared may need to be addressed when considering how to implement an evaluation framework.
- 5.48. The Data Lab project demonstrates the value that can be gained from existing datasets, as well as some of the barriers to providing access to individual level data. Changes in legislation¹⁴⁰ could lead to additional data becoming available so that an HE Data Lab equivalent could be built as part of an evaluation framework.
- 5.49. Other changes to data collection and reporting could support an evaluation framework, such as changes to the UK PIs, new datasets such as learning gain measures and global student outcome measures, and additional reporting on FE provision.

¹³⁹ Morgan, J. (2015) OECD's AHELO project could transform university hierarchy *Time Higher Education* [Online] <http://www.timeshighereducation.co.uk/news/oecd-ahelo-project-could-transform-university-hierarchy/2020087.article> (Accessed: May 2015)

¹⁴⁰ The Small Business, Enterprise and Employment Act is one such piece of recent legislation: <http://services.parliament.uk/bills/2014-15/smallbusinessenterpriseandemployment.html> (Accessed: May 2015)

06. ECONOMETRIC ANALYSIS

This chapter reports the findings of an econometric analysis of secondary data to help understand the impact of the Student Opportunity allocation.

6.1. The desk research conducted as part of this study has demonstrated the value of using existing datasets for evaluation purposes, as seen in the analysis of existing HE literature and in the exploration of evaluation from other sectors. With this in mind, CFE and economists from the University of Sheffield and University of Sussex worked with HEFCE to explore the data that is currently held and explored what further analyses could be carried out to demonstrate the impact of the SO allocation. The aim was not only to provide evidence of the impact of the funding, but also to demonstrate the potential to use econometric analysis to improve evaluation, highlight limitations and suggest how results could be strengthened in future. The analysis aims to explore the return on investment to the SO funding. This chapter details the main findings. The full analysis is shown in appendix 2.

6.2. The analysis was undertaken in two stages. The first stage estimates the number of additional degrees obtained as a result of the SO funding. We looked at the effects of the funding on degrees obtained by students from each Participation of Local Areas (POLAR3) quintile. POLAR classification groups areas of the country according to the proportion of young people who participate in HE. Quintile 1 areas have the lowest participation rates of 18 and 19 year olds (most disadvantaged), while quintile five areas have the highest participation rates (most advantaged).¹⁴¹ It is important to assess on which POLAR quintile the SO funding has had most effect as the funding aims to support the most disadvantaged students. We looked at the impact of the funding on degree classification: high classification degrees are defined as either first class or upper second class, all other classes are defined as low-classification. We also explored whether additional degrees obtained were in higher paying subjects (medicine, law, engineering, maths/computing and physical science) or lower paying subjects (all other subjects). This enabled us to take into consideration the different values of different degrees in the labour market.

6.3. We used regression analysis to determine whether there is an association between SO funding levels and degree outcomes. So, the research question was: does the number and type of degrees attained by students at an institution (and in particular degree attained by the most disadvantaged students) increase as the amount of funding the institution receives increases?

¹⁴¹ HEFCE (2015) *POLAR – Participation of Local Areas* [Online] <http://www.hefce.ac.uk/analysis/yp/POLAR/> (Accessed: May 2015)

- 6.4. Because the amount of SO funding an institution receives is based on the number of WP students they have, we lagged the funding data by four years in our analysis – that is, we looked at the relationship between the amount of funding received and the resulting degree outcomes four years later. Many of those students attaining degrees will not have been at university when the SO funding allocation was calculated four years earlier.
- 6.5. Analysing longitudinal data for the same set of institutions allows us to control for any constant, unobserved characteristics of institutions that are also related to funding levels and degree attainment. We also control for the varying sizes of student intakes between institutions and over time. This means effects observed are not simply due to some institutions having larger numbers of degree entrants in any one year.
- 6.6. We scaled the analysis results by £1,000 increases in funding. We found that there is a small but positive and statistically significant relationship between an increase in funding to an institution and an increase in degrees attained in higher-paying subjects by individuals from POLAR quintile 1.
- 6.7. There are many more students achieving degrees in lower-paying subjects however. As a result the major impact of SO funding on attainment is in these subjects. There is a statistically significant and positive effect on additional degrees in lower-paying subjects for individuals from POLAR quintiles 1 to 3. There is also a smaller, but still statistically significant impact on those from POLAR quintile 4. There is no statistically significant relationship for the most advantaged students (POLAR quintile 5).
- 6.8. Looking at the relationships between funding and degree classification, there is a significant increase in lower-classified degrees for individuals from quintiles 1 and 2. And there is a larger, still significant, increase in first class or upper second class degrees for individuals from POLAR quintiles 1 to 3.
- 6.9. We can see therefore that there is a relationship between the SO funding and increased degree attainment, particularly among students from more disadvantaged areas. The SO funding has more of an effect on the attainment of higher-classified degrees, and in lower-paying subject disciplines. However this relationship is not evidence that the SO funding is necessarily the cause of the increase in attainment. To attribute the effects to the funding requires a counterfactual group for comparison. This research design could be strengthened by comparing the changes in degree attainment over the same time period with a group of institutions that had not received the funding. However, as the funding is distributed to all English HEIs, there is no obvious comparison group.
- 6.10. The second stage of the analysis is to estimate the wage and employment returns of the additional degrees for the different groups of students compared with those who could have gone to university but did not (in this case, people with two or more A levels). We used data from the Labour Force Survey (LFS) to calculate these returns. The LFS is a

quarterly survey of a nationally representative sample of households from across the UK, with all members of selected households participating in the survey. We sub-divided the data on those with a degree according to higher and lower paying subjects and higher and lower degree classifications just as we did with the HEFCE data. People with two or more A levels are used as the control or comparison group for this analysis, providing an estimate of how much graduates would have earned if they had not obtained their degree.

6.11. The wage returns are all positive and statistically significant, as would be expected. The wage returns vary from a 36 per cent increase relative to A levels for a degree in a higher-paying subject to a 17 per cent increase for a degree in a lower-paying subject. The difference in estimated returns between higher and lower classification degrees is not quite as large (28% to 18% respectively). Degrees in each of the groupings increase the probability of being employed compared with someone with two or more A levels by around 10 percentage points. Only the lower-classification degrees produce a lower effect of eight percentage points.

6.12. This information was then used to calculate the lifetime wage differences. To take account of the fact that the value of these estimated benefits occur in the future and throughout the working life, we calculated the Net Present Value (NPV) – the value in today's money of the additional benefits of acquiring a degree.

6.13. The results from this stage of the analysis show that obtaining a degree in a higher paying subject is associated with an additional £235,000 in lifetime earnings, taking into account both the higher weekly earnings and greater probability of being in employment. Estimated lifetime earnings premia for our four different categories of degree are shown below in Table 4.

Table 4: Estimated lifetime earnings premium of different degree classifications and subject types

	Lifetime earnings premium
Higher paying subject	£235,000
Lower paying subject	£135,000
High class degree	£190,000
Low class degree	£125,000

6.14. These NPVs were then multiplied by the number of additional degrees obtained as a result of the SO funding. For example, the additional low-paying degrees have an additional value of £6,800 for every £1,000 of SO funding (the funding has a larger effect on

the attainment of degrees in these subjects). In total an additional £1,000 of extra funding produces greater degree attainment to the value of £7,700, when disaggregated across the value of a degree. If the additional degrees from £1,000 of extra funding are disaggregated across classifications, then the estimated return is £9,000 – this is higher because a greater proportion of the additional degrees are in the higher value category in this case. Therefore, the results of the analysis suggest that an additional £1,000 of SO funding yields economic benefits in the range of £7,700 - £9,000.

- 6.15. This range is an upper bound for the estimated economic impact. The assumption behind the analysis is that the total difference between the wages of graduates and individuals with two or more A levels is due to the additional education of the former group. This is an extreme assumption. An unknown, but no doubt significant, proportion of the observed wage differential will actually be due to the fact that the graduates were more able in the first place, and would have earned a higher wage anyway even without going to university. However, the benefits exceed the funding cost to such an extent that no reasonable proportion attached to prior ability could reduce the benefits below the costs.
- 6.16. It should be noted that we only analyse economic benefits here. There will be further non-economic benefits of higher degree attainment that are not considered here. The conclusion of the analysis would therefore seem to be that the SO funding is justified on efficiency grounds, with the benefits outweighing the costs. In addition, there is also support on equity grounds, given that most of the additional degrees obtained are concentrated amongst individuals from the lower POLAR quintiles.
- 6.17. Given the estimated lifetime premia, as shown in Table 4 above, we could also estimate the implied benefit to the Exchequer of additional tax, employee and employer NI and VAT receipts. Assuming current rates for all of these taxes remain unchanged at their current values, and uprating the thresholds between tax and NI brackets by 2 per cent annually, the analysis estimated that an additional £1,000 of SO funding would increase Exchequer income by £4,100 - £4,850, depending on whether degrees are classified by subject or classification. These figures do not include any Exchequer costs (other than the SO funding) for providing the additional university tuition, nor any Exchequer gains from lower state benefit dependency of graduates, both of which effects would be expected to be small. Given the underlying assumptions in calculating these gains, the estimates are indicative rather than definitive.
- 6.18. It would have been useful to consider finer disaggregation of degree types than the two dichotomies (higher/lower paying subjects and high/low classification) and cross-grouping between subject and classification to more accurately estimate the value of the degrees obtained. However, this was not possible as the sample sizes in each category were too small. It would also be useful to have detailed information from the institutions on the activities undertaken with the funding, in order to determine which activities are producing the best outcomes

Econometric analysis limitations

Non-monetary benefits of education

- 6.19. In this analysis, we have only considered the impact of SO funding on graduate wages and probability of being employed. However, it is important to note that acquiring more years of education does have non-monetary, or non-pecuniary, benefits as well, which are very important. More years of education can generate many more experiences for WP graduates in and outside the labour market, in addition to boosting their earning power. There is a growing literature that examines these non-financial returns of education, although most of it is focused on schooling, some of which is described in paragraphs 2.52 to 2.55.
- 6.20. Oreopoulos and Salvanes¹⁴² provide a comprehensive summary of literature on non-financial benefits of schooling, but also some interesting empirical evidence of their own, employing US General Social Survey data and Norwegian administrative data. They assess the non-pecuniary benefits in the labour market by examining measures of job characteristics, job satisfaction and changes in employment. Their findings suggest that workers with similar observable family backgrounds but with more schooling are in jobs that offer more sense of accomplishment; those with more years of university are in jobs with higher occupational prestige than high school graduates who do not go to university. As we have shown in our econometric analysis, the SO funding has increased the number of graduates, reducing the probability of being unemployed. As a result, these graduates would benefit from non-pecuniary benefits in the labour market, in addition to higher earnings. However, due to lack of data, we are unable to quantify these benefits.

Unobserved individual ability

- 6.21. Another limitation of our empirical work is that, due to lack of data, we cannot take into account students' innate ability in our econometric analysis. We recognise that some of the observed returns to university degrees will be due to unobserved ability of individuals who go to university, compared with those who do not. Moreover, evidence has shown that individual ability may also be important when a student makes a decision on which degree to study. For example, Arcidiacono¹⁴³ finds individual ability to be important, both, for labour market returns and for sorting into particular subjects degrees. Since ability is expected to be positively correlated with the returns to subject degrees, we would expect the returns to education to be lower, once we accounted for ability in our wage regressions.
- 6.22. In our empirical analysis, in order to try and disentangle the impact a university degree has on labour market outcome, we compared the returns of graduates in 'high/low' paying subjects and 'high/low' degree classifications with the returns of those of individuals

¹⁴² Oreopoulos, P. and K. Salvanes (2011) *Priceless: The Nonpecuniary benefits of schooling* Journal of Economic Perspectives, 25(1): 159-184.

¹⁴³ Arcidiacono, P. (2004) *Ability Sorting and the Returns to College Major*, Journal of Econometrics, 121(1-2): 343-375.

with two or more A Levels who did not go to university. This was carried out because two or more A Levels are the minimum qualifying standard required for entry to a university. In this way, we could compare the labour returns of university graduates with the returns of individuals with two or more A Levels who chose not to go to university. Thus, we could tackle to some extent the unobserved ability bias of our estimates discussed above, as achieving two or more A levels can act as a proxy for the unobserved individual ability. However, one limitation of this approach is that there are very few individuals who get two or more A Levels but decide not to go to university. Thus, our control group of individuals with two or more A Levels may not capture the real differences in wages between individuals with the same ability with and without a university degree. Since this is a highly selective small group, our results should be treated with caution.

07. CONCLUSIONS AND RECOMMENDATIONS

This chapter summarises the key findings from the research and offers recommendations for the development of a WP evaluation framework.

- 7.1. This report has provided an overview of the research that was undertaken to develop an evaluation framework for widening participation. We have explored the current literature, from both the UK and further afield, that describes the impact of WP activity. We developed a draft evaluation framework following consultation with the sector and tested this framework with a wide range of staff and stakeholders from a sample of HE institutions. We also carried out econometric analysis of secondary data.

Impact of WP

- 7.2. The econometric analysis carried out as part of this project provides further evidence of the return on investment in WP. We found a relationship between the Student Opportunity (SO) funding provided by HEFCE and increased degree attainment, particularly amongst students from more disadvantaged areas. We estimate that each additional £1,000 of SO funding yields economic benefits in the range of £7,700 and £9,000. This analysis shows that the SO funding is justified on efficiency grounds, with the benefits outweighing the costs.
- 7.3. The econometric analysis only investigated the economic benefits of WP. Our review of the literature shows non-economic benefits of WP for individual students and wider society. HE institutions taking part in the research gave examples of the transformative impact of HE on individual students from disadvantaged backgrounds. Institutions with high numbers of WP students also made a case for the impact a more diverse student body has in terms of enriching the student experience for all. We collected evidence of the impact of universities and colleges on local economic development, although the specific contribution of WP to this was not always easy to identify.

Developing an evaluation framework for WP

- 7.4. There are a number of possible objectives that an evaluation framework could be designed to meet. The full list of objectives explored in this report are:
- to ensure that central government funding (the SO allocation) is appropriately spent (**accountability**)
 - to enable an overall assessment of the difference to student and society outcomes that can be attributed to WP funding (**impact assessment**)

- to demonstrate the value of any impact (**return on investment**)
- to identify differences between institutions' approaches to WP and to see if these differences are associated with differential student outcomes (**benchmarking**)
- to establish the effect of different types of WP interventions (**what works**).

7.5. The final design of an evaluation framework is therefore dependent on the objectives it is aiming to meet. In this report we aim to provide the necessary information, building blocks and recommendations to enable the creation of an evaluation framework according to whichever objective(s) are considered most important, the resources available and other constraints. Each of these objectives is explored in turn below, and the opportunities and barriers involved in creating an evaluation framework to meet that objective are discussed.

Accountability

7.6. Developing an evaluation framework to address whether the central government funding is appropriately spent is important both from HEFCE's perspective, as the organisation distributing the funding, but also from an institutional perspective, ensuring that they are meeting the requirements of the funding.

7.7. HM Treasury's Magenta book¹⁴⁴ identifies three main types of evaluation: process evaluations to assess whether policy is being implemented as intended; impact evaluations to provide an objective test of what changes have occurred and the extent to which these changes can be attributed to policy; and economic evaluations, which aim to compare the benefits of a policy with its costs. Evaluating WP funding from an accountability perspective, ensuring the money is spent as intended, can therefore be categorised as a process evaluation. The Magenta book describes these types of evaluations as being descriptive in nature, often involving the collection of either qualitative or quantitative data.

7.8. HEFCE currently monitors how HE institutions spend the SO allocation through an annual data return. Using data returns for evaluating the impact of WP spend has been explored in more depth in a sister project.¹⁴⁵ This project concludes that the data return process is most effective for evaluating accountability but changing the return to address the other objectives would add too much additional burden to institutions and is not necessarily the most effective evaluation methodology for these purposes.

¹⁴⁴ HM Treasury (2011) *The Magenta Book: Guidance for evaluation*
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220542/magenta_book_combined.pdf
 (Accessed: April 2015)

¹⁴⁵ CFE Research (2015) *Student Opportunity outcomes framework research programme: Data return project*. Bristol: HEFCE

Impact assessment

- 7.9. Measuring the impact of WP would provide evidence at both a national and local level that observed positive outcomes can be attributed to the activities and resources that the funding provides. Paragraph 5.8 of this report discusses the supplementary guidance to the Magenta book, detailing the evaluation methodologies that provide stronger evidence for attributing positive outcomes to policy. These include RCTs and research designs that use comparison groups.
- 7.10. The literature review in Chapter 2 and the evidence collected from institutions about their own evaluation techniques in Chapter 4 suggests that very few RCTs or studies with counterfactuals take place currently. To be able to confidently attribute any positive student outcomes to WP activities and resources (and therefore the funding spent to provide these), requires that these stronger evaluation methodologies are used. It should therefore be a consideration that more of these types of evaluation are encouraged and supported.
- 7.11. Some of the limitations to carrying out impact evaluations are described in paragraph 5.10. The impact of WP interventions can be difficult to evaluate. The more distant impacts, such as the impact on society, the economy and the local region, are from the inputs and activities, the more challenging it is to link the two empirically. Some impacts can be difficult to operationalise (and thus measure) and may take place years after graduation, making tracking and data collection difficult, particularly for institutions. It can also be problematic attempting to evaluate a policy or intervention after it has already been established. This means long-running interventions, particularly those that have become embedded in institutional practice, are much harder to implement impact evaluations for than for new interventions. Furthermore, evaluations have limited power to attribute impact to interventions where there are no comparison groups. Again, embedded interventions would be problematic to evaluate robustly for this reason, often being delivered to a whole cohort rather than targeted to particular students. Similarly, if interventions are delivered to all WP students, this leaves no comparable group to act as a control.
- 7.12. Overcoming these limitations where possible, therefore, should be an aim of the evaluation framework. Institutions should be encouraged and supported to carry out evaluations of new approaches and innovations to WP practice using comparison groups. The findings would provide both evidence of what works and evidence that positive outcomes can be attributed to interventions.
- 7.13. Additional data collection, particularly from the point of engagement with outreach, would also benefit impact evaluations. Improved data collection could support comparison studies. Longitudinal data collection would enable impacts to be tracked further into the future. Subscribers to HEAT are already able to collaborate to research and evaluate the impact of outreach interventions. A further roll-out of HEAT or standardisation of HEAT-type collaborative data collection tools could enable further research of this type.

7.14. Improving access to secondary data would also enable better impact evaluations to take place, for example greater access to the National Pupil Database paired with HEAT-type individualised data on outreach participants would enable comparison groups to be created. Matching this data with student records from HESA and to Student Loans Company data or HM Revenue and Customs data would enable interventions to be associated with longer-term student outcomes and economic impacts. Studies comparing WP students that were eligible to go to HE but did not to their peers that did and the economic contribution of both groups over time would be possible.

7.15. The case studies explore some of the impacts of WP that go beyond the more easily measurable economic benefits to the individual and to society (see Supplementary case studies published separately). Additional data collection and matched data analyses could be carried out to measure some of these impacts, but some of the impacts of participating in HE are difficult to measure, particularly those relating to citizenship and cultural capital. Qualitative studies are beneficial to aid sector and institutional understanding of these types of impact.

7.16. The extent to which the sector as a whole should be involved in impact evaluations should be considered, particularly given the concerns raised by smaller institutions about the burden of carrying out evaluations detailed in Chapter 4. The way that the evidence is collected and shared and the approach to building a body of evidence could mean that a subset of institutions could carry out evaluations on behalf of the sector, similar to the EEF model described in Chapter 5. Similarly, a representative sample of institutions could be selected and supported to carry out impact evaluations to provide evidence to the sector.

Return on investment

7.17. The rise in fees and increasing spend on WP activities highlight the importance of analysing the return of investment. The sector needs to demonstrate that the investment provides benefits to the economy to ensure the continued investment in this area. It is also important to demonstrate this at a local level. Being able to demonstrate the return value of WP will ensure that it remains a priority at the sector and local level and that the investment is maintained.

7.18. The econometrics analysis carried out by the economics associates on the research team goes some way to demonstrating a return on investment. Additional data, particularly from secondary sources such as those outlined in paragraph 7.14 above, would enable more robust estimates of return on investment to be produced and comparison groups to be constructed to further strengthen ability to infer causal effects.

7.19. However, as illustrated in chapter 4, not all benefits of WP and higher education can be easily measured in financial terms and it is arguable that not all should be. Capturing other benefits, including qualitatively, remains important.

Benchmarking

- 7.20. Many institutions discussed how benchmarking was an important aspect of WP activity, allowing for comparison with other similar HEIs. This can only be achieved if comparable data is collected, analysed and shared across the sector. Many institutions visited in the fieldwork described how important the UK PIs were (this is discussed in paragraph 4.48) and how this is seen to be a reliable source of information for benchmarking.
- 7.21. A defined set of objectives for WP are required to enable benchmarking and a common set of success measures needs to be agreed for the purpose of benchmarking. The current review of the UK PIs and the limitations for FE institutions detailed in 5.40 are two areas that may need considering further. If the UK PIs were extended to include a wider range of comparator data and success indicators (for example, degree classifications alongside the current entry, retention and employability indicators) and were provided for all HEIs including FE colleges, as well as covering a wider range of WP groups, this would improve the ability of institutions to benchmark WP activity. However, the data quality and availability, particularly when looking at small target groups, such as students who have previously been in care, could prevent the development of these at a national level. Benchmarking at a local level, potentially through sharing data between institutions that are part of a national network for collaborative outreach could be one option to consider.

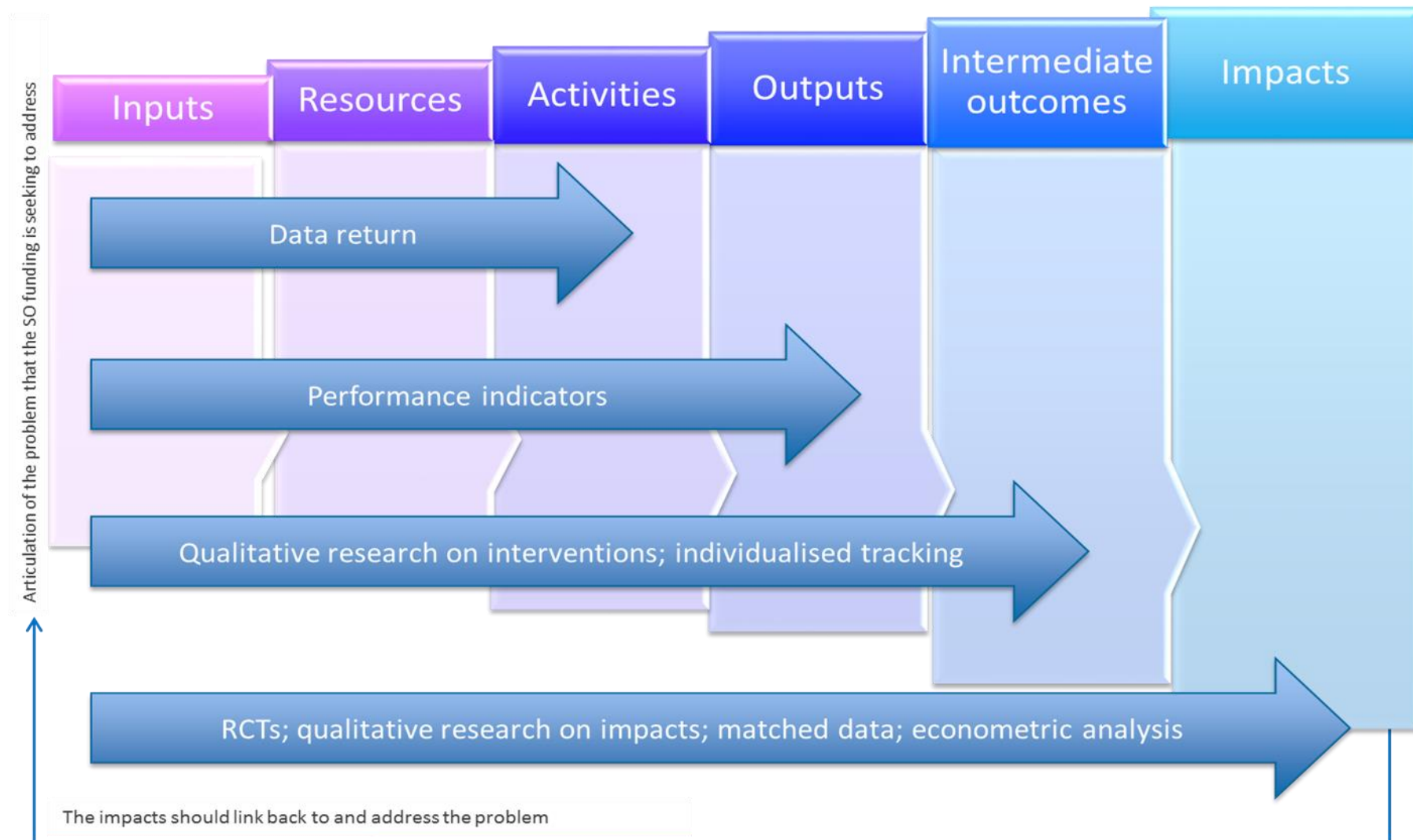
What works

- 7.22. The evidence collected from institutions, discussed in Chapter 4 and detailed further in the Supplementary case studies document, illustrates the amount and type of evaluations taking place to understand 'what works' - which interventions are most effective locally. The robustness of these evaluations varies across the sector, from surveys of participants to student tracking and qualitative research carried out or supported by academics.
- 7.23. Carrying out evaluations on new interventions or innovations in approach using control groups or other comparison groups as described in paragraph 7.10, would provide stronger evidence of which interventions are effective. However, interventions that are long standing, embedded or delivered as part of a suite of activities are harder to evaluate in this way.
- 7.24. The matrix of evaluation methodologies, shown and discussed in paragraph 5.11 rates qualitative studies at being effective for answering questions like 'How does it work?', 'Does it matter?' and 'Is this intervention right for this group of people?', all questions that are valuable to explore as part of understanding what works. It is also important therefore to supplement quantitative evaluations with more qualitative studies to understand not just what works, but why it works and therefore the extent to which practice may be transferable to other contexts.

Summary

- 7.25. The different objectives of an evaluation framework can be explored using different data sources and evaluative techniques. A data return is most effective at evaluating accountability; performance indicators (or other national datasets and indicators) are most effective for providing benchmarking; qualitative research, longitudinal tracking of students (including using matched-data) and evaluations with comparison groups are appropriate for establishing what works; and econometric analyses are effective for estimating returns on investment. Impact assessments, that is, being able to attribute outcomes and impacts to activities and funding, would also be best supported by improved data collection and data matching techniques, coupled with robust research methodologies like RCTs and studies with comparison groups.
- 7.26. Considering these evaluation techniques alongside the draft evaluation framework and original conceptual framework, these techniques can be mapped to the different elements of the framework. This has been visualised in figure 2. It shows that a data return can provide data on inputs, resources and activities; performance indicators can demonstrate outputs; individualised tracking and qualitative data is appropriate for understanding outcomes and qualitative research, RCTs, analysis of matched data and econometrics are best used for evidencing impact. A future evaluation framework therefore must deploy multiple methods at different levels to meet all of the potentials objectives identified.

Figure 2: Evaluative techniques and the levels of the evaluation framework that they can provide evidence towards



Recommendations

7.27. We held a roundtable discussion to share our findings and help develop our recommendations. The research team, including CFE's economist associates and WP specialists, and HEFCE were represented and together explored the research outcomes.

7.28. As well as discussing the findings, HEFCE were keen to establish a practical way forward, taking into account:

- **The current data available:** what elements of an evaluation framework could be established using existing data sources or through sharing of best practice?
- **Extending or modifying current data:** in what ways could the existing data or evaluation practice be improved by making small changes to the current data collection methods?
- **More extensive changes to data collection:** How could the evaluation framework be populated fully and what kinds of further data and analysis are required to do this?

Data return

7.29. If a data return collects data on the first three steps of the logic chain it can be used to demonstrate accountability. The sister project, investigating how a data return could be used as part of an evaluation framework, concluded that the current design is adequate for this purpose. However, it also should be noted that using this data longitudinally and in conjunction with other datasets may extend its uses, particularly in the assessment of what works (adding in a dimension of 'at what cost?'). This requires data collection to be maintained through time consistently and may require additional requests for cost information for specific interventions.

Recommendation (short term): Maintain the current data collection so that accountability can be assessed.

Recommendation (medium term and longer term): Consider the longer term uses of this data, in consultation with the sector so that its uses can be extended. Should additional data be required to better evaluate what works, this needs to be requested in advance of reporting periods with enough lead in time to enable institutions to put in place suitable systems for data collection (data collection is explored further in the sister project).

Performance indicators

7.30. Performance indicators and other sector level datasets are a valuable source of benchmarking information for institutions. As discussed in paragraph 7.21 above, establishing a set of outcome indicators with comparable data will further enable benchmarking to take place.

7.31. Evidence from around the world suggests that this approach can be successful at a national level. In Australia they have established national outcome targets related to specific groups.¹⁴⁶ In Croatia, funding agreements include performance indicators relevant to student success. Institutions are required to select a minimum of four indicators that best reflect their mission, objectives and goals from a wider suite of indicators.¹⁴⁷ This approach allows a degree of tailoring of key performance measures to best meet institutional contexts. We provide a suggested framework of outcomes that could be used for this purpose.

Recommendation (short term): HEFCE should continue to support the production of performance indicators for the purposes of benchmarking WP activity.

Recommendation (medium and longer term): HEFCE should consider how the performance indicators or other national datasets could be developed to provide further benchmarking opportunities. The development of an outcomes framework, demonstrating the breadth of outcomes that can be delivered through WP activities and the indicators that can be used to measure these outcomes should be provided in the medium term to support further benchmarking and monitoring activities.

Qualitative research

7.32. Qualitative research is valuable for understanding how and why different interventions work at a local level and for exploring some of the more intangible benefits and impacts of widening participation beyond the economic and other quantitative measures of impact. Qualitative research may also be useful for exploring the differences between similar interventions at different types of institutions, taking into account the contextual differences that may be influencing outcomes.

Recommendation (short term): HEFCE should consider how existing qualitative studies can be collected and their findings synthesised and shared so that best practice is better understood across the sector.

Recommendation (medium term and longer term): HEFCE should consider how further studies of this kind can be encouraged through policy and funding decisions.

Individualised tracking

7.33. Individualised tracking of students, from outreach activity through to graduation, is a

¹⁴⁶ Gale, T., Parker, S. (2013). *Widening participation in Australian Higher Education*. Bristol, UK: Higher Education Funding Council for England. Available at: http://www.hefce.ac.uk/media/hefce/content/pubs/indirreports/2013/WP.international,research/2013_WPeffectivenessAus.pdf (Accessed: May 2015)

¹⁴⁷ Not yet published in English

valuable methodology for collecting data to understand what works and for impact assessments. The expansion of HEAT means that a growing collection data is potentially available for these types of evaluations. The HEAT team are also carrying out additional analyses of this data to try to attribute outcomes to WP activities. Additional analysis of this data, coupled with RCTs, would provide the most robust evidence of impact.

Recommendation (short term and medium term): HEFCE should continue to encourage and support the use of HEAT or other collaborative individualised tracking tools. They should support the wider use of the data and consider how this data might be pooled and shared for the purposes of sector-level evaluations.

Recommendation (longer term): HEFCE should consider ways of supporting the use of individualised data for evaluating WP and also how best to gather and share this evidence.

Randomised control trials

- 7.34. RCTs and studies with comparison groups provide the strongest evidence of impact and what works and should be encouraged for new interventions or innovations to existing approaches.

Recommendation (short term): Institutions should consider how they might be able to carry out stronger evaluation of WP interventions, particularly how they can collaborate with the research community and their network of other institutions and how best to share good practice in this area.

Recommendation (medium term and longer term): HEFCE should consider how institutions can be encouraged and supported to carry out these types of evaluations through policy and funding decisions.

Recommendation (medium term): HEFCE should also consider making findings from such evaluations available in an accessible format that allows practitioners to see which approaches are supported by the best evidence. The EEF toolkit described in paragraph 5.23 and 5.24 is one example of an approach for sharing best practice.

Matched data and econometric analyses

- 7.35. Matching data on individuals from school, through HE, to graduation and into work also enables better quality evaluations of what works, impact assessments and estimation of return on investment. Currently, there is limited data matching that takes place; however, this is likely to improve in future thanks to greater data accessibility and sharing between government departments (discussed in paragraph 5.48). As demonstrated in Chapter 6 of this report, there are many ways in which existing data can be used for this type of analysis. Providing access to the right levels of information, taking into account data protection, may be a further limitation, and could be an issue where cohorts of WP students are small

Recommendation (short and medium term): HEFCE should consider how datasets can be accessed and analysed by their own analysts, institutions, researchers and economists to provide improved evaluations. .

Recommendation (longer term): Overcoming some of the limitations described above may be possible in the longer term. Collating data from across institutions and linking data from other sources may provide larger cohorts for analysis or for sector level analyses to take place (for example care leavers in HE versus those that chose not to come). HEFCE should pursue opportunities to link data from different sources and support its analysis by institutions, researchers and economists so that the impact of WP funding can be better established and return on investment estimated. Institutions should consider their capability to receive and analyse this type of information, the skills available internally and how networks of institutions (or schemes like HEAT) could share expertise, maximise the benefits and grow the evidence base at a sector level.

APPENDIX 1: LOGIC CHAINS AND INDICATOR BANK

Figure 3 – Logic chain for outreach

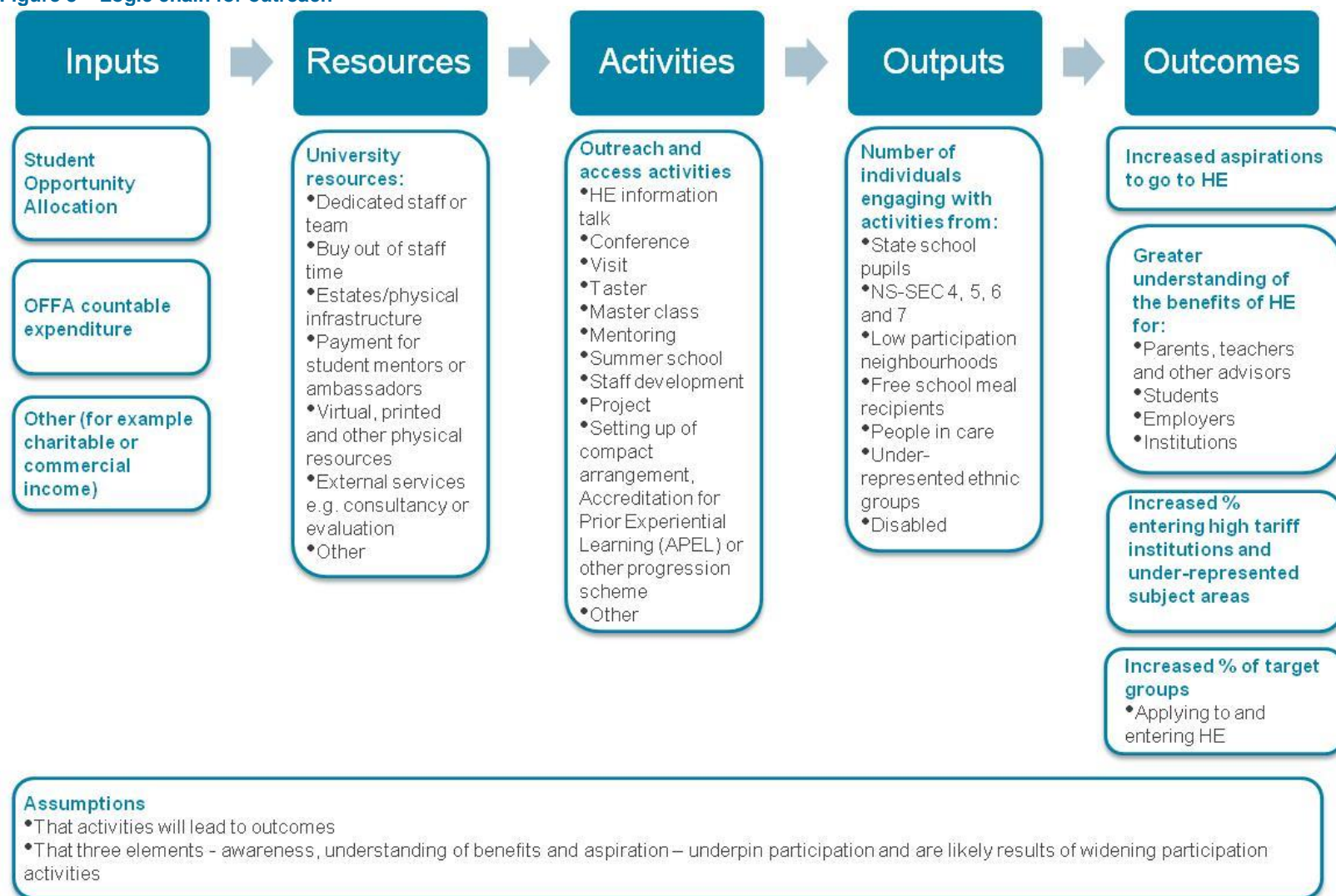


Figure 4 – Logic chain for retention

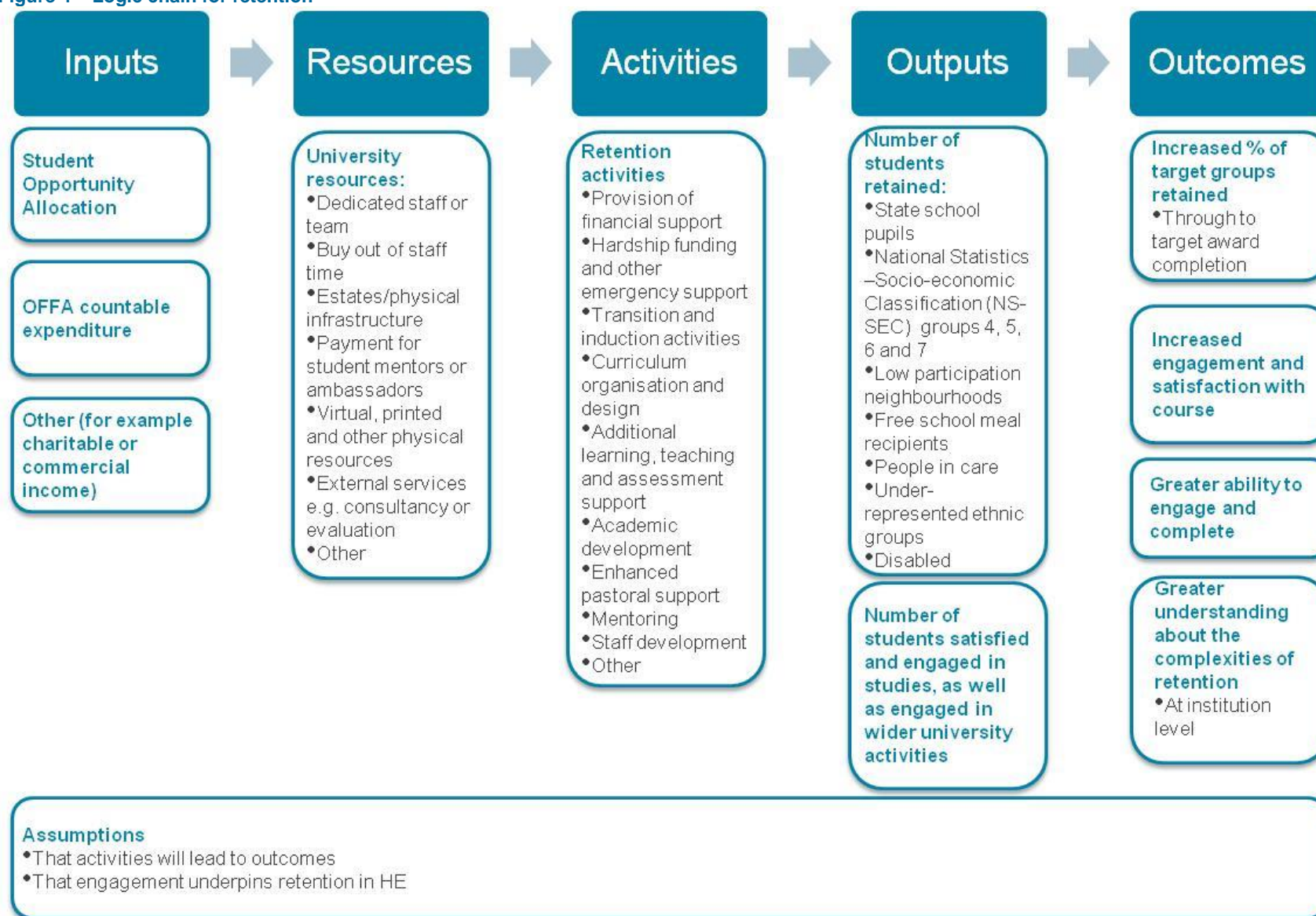


Figure 5 – Logic chain for student success

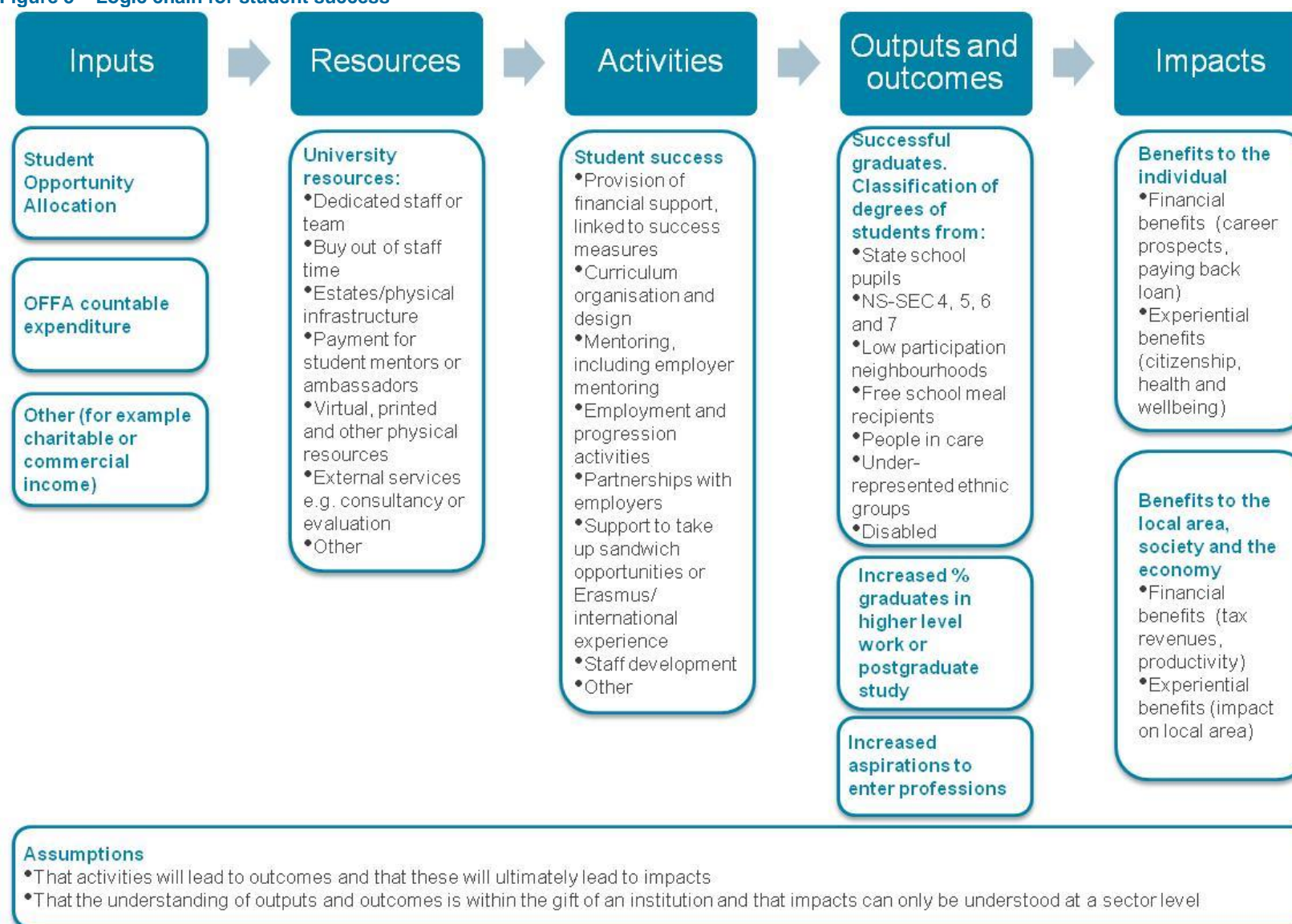
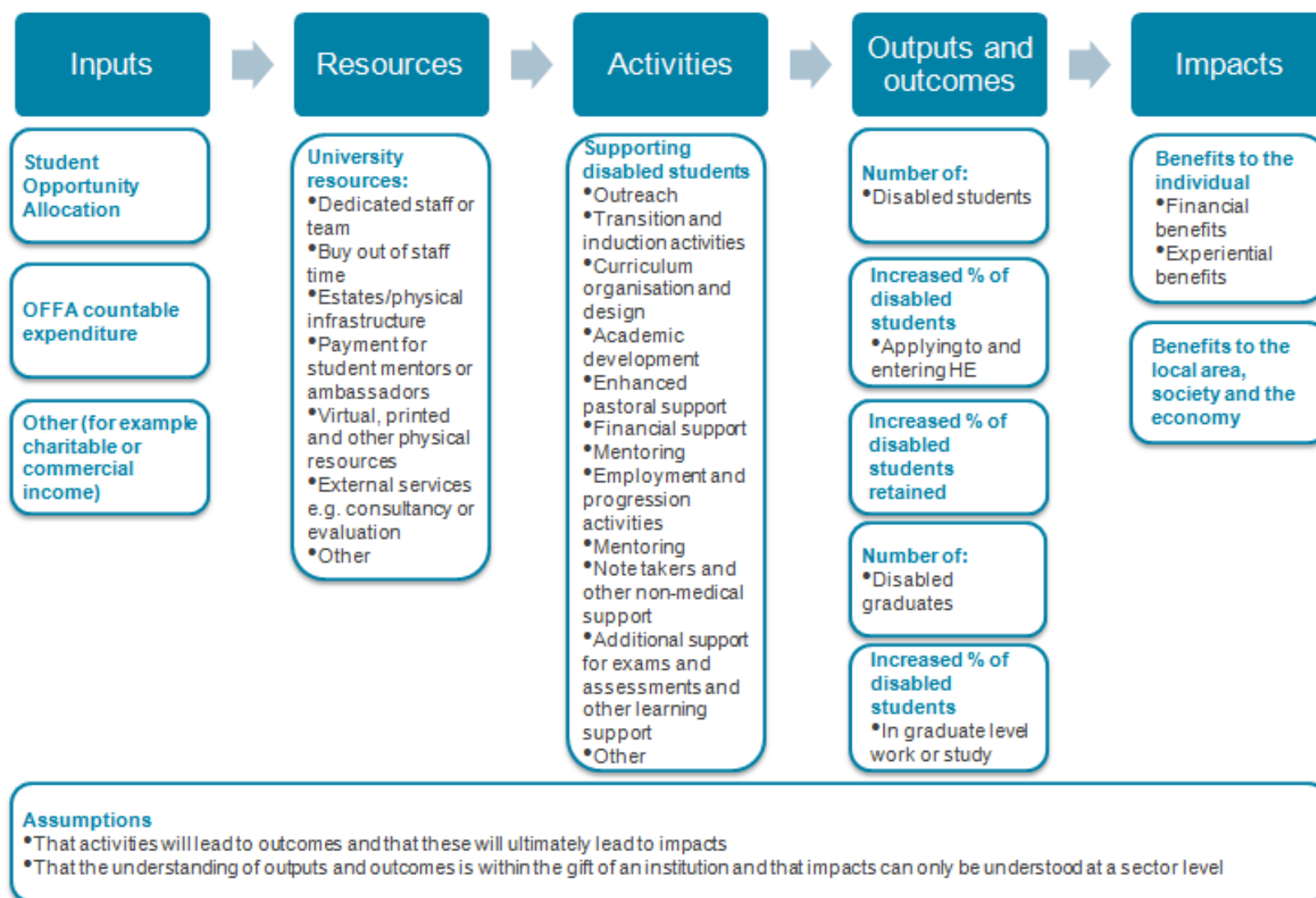


Figure 6 – Logic chain for supporting disabled students



Indicator bank

Evaluation area	Metric, output or outcome	Indicator/question	Primary data source(s)
Inputs	<ul style="list-style-type: none"> Student Opportunity allocation OFFA countable expenditure Other 	<ul style="list-style-type: none"> Which funding streams are available to fund WP activities and resources? How much funding is available by stream and institution? 	<ul style="list-style-type: none"> HEFCE and OFFA returns
Resources and activities	<ul style="list-style-type: none"> University resources Outreach and access activities Retention and student success activities Supporting disabled students 	<ul style="list-style-type: none"> Which activities and resources are funded? How many individuals benefit from the activities and resources? 	<ul style="list-style-type: none"> HEFCE returns (future data return could collect this data to a greater granularity)
Outputs – outreach and access	<ul style="list-style-type: none"> Number individuals engaging with outreach and access activities from disadvantaged backgrounds 	<ul style="list-style-type: none"> How many individuals from disadvantaged backgrounds have engaged with outreach and access activities? 	<ul style="list-style-type: none"> Monitoring of activities HEFCE and OFFA returns
Outputs – retention	<ul style="list-style-type: none"> Number of retained disadvantaged students Number of engaged, satisfied disadvantaged students 	<ul style="list-style-type: none"> How many students from disadvantaged backgrounds have been retained? How many disadvantaged students are satisfied and engaged with their studies? 	<ul style="list-style-type: none"> Student records and UK PIs National and local surveys, information on club and society attendance, data on take up of paid work

Evaluation area	Metric, output or outcome	Indicator/question	Primary data source(s)
Outputs – student success	<ul style="list-style-type: none"> ▪ Number of disadvantaged students graduating with a first or 2:1 ▪ Number of disadvantaged students progressing to PG study ▪ Number of disadvantaged students progressing to professional and graduate level work 	<ul style="list-style-type: none"> ▪ How many students from disadvantaged backgrounds are graduating with a good degree? ▪ How many students from disadvantaged backgrounds are progressing to PG study? ▪ How many disadvantaged students are progressing into professional or graduate work? 	<ul style="list-style-type: none"> ▪ Student records ▪ Student records, DLHE ▪ DLHE, longitudinal DLHE
Outputs – disabled students	<ul style="list-style-type: none"> ▪ Number of disabled students engaging in outreach, being recruited to HE and progressing through to their target award 	<ul style="list-style-type: none"> ▪ How many disabled students are supported into and through HE? 	<ul style="list-style-type: none"> ▪ HEFCE returns, institutional student records, monitoring of outreach activities
Outcomes – outreach and access	<ul style="list-style-type: none"> ▪ Increased aspirations to go to HE ▪ Greater understanding of the benefits of HE, including the financial benefits, the experiential benefits and an increased awareness of HE and what it involves ▪ Increased % of target groups applying to and entering HE ▪ Increased % of disadvantaged students entering high tariff institutions and under-represented subject areas 	<ul style="list-style-type: none"> ▪ Has there been an increase in the proportions of individuals applying from disadvantaged backgrounds? ▪ Has there been an increase in the proportions of students recruited from disadvantaged backgrounds? ▪ Has the proportion of disadvantaged students aspiring to go to HE increased and is there a greater understanding about the benefits within these groups? ▪ Is there a greater mix of students at high tariff institutions and in under-represented subjects? 	<ul style="list-style-type: none"> ▪ Application statistics ▪ Enrolment statistics ▪ Engagement at events; surveys and focus groups ▪ National statistics

Evaluation area	Metric, output or outcome	Indicator/question	Primary data source(s)
Outcomes – retention	<ul style="list-style-type: none"> Increased retention % of target groups Increased % of disadvantaged students receiving an award and achieving their target award Increased engagement and satisfaction of disadvantaged students Greater ability to engage and complete Greater understanding about the complexities of retention 	<ul style="list-style-type: none"> What proportion of disadvantaged students are retained year on year? What proportion of disadvantaged students received an award? What proportion received their target award? Are there a greater number of disadvantaged students engaging or satisfied? Does the institution understand the complexities of retention and how to tackle issues? 	<ul style="list-style-type: none"> Student statistics and UKPIs Student statistics Student surveys, focus groups, personal tutor programmes Institutional policies and practices
Outcomes – student success	<ul style="list-style-type: none"> Increased % of graduates in higher level work and postgraduate further study from disadvantaged groups Increased aspirations to enter professions 	<ul style="list-style-type: none"> Have greater numbers of disadvantaged students received high level jobs or gone onto high level study? Do a larger proportion of graduates aspire to enter the professions? 	<ul style="list-style-type: none"> Student records, DLHE and longitudinal DLHE Information, advice and guidance (IAG) survey, local surveys, focus groups
Outcomes – disabled students	<ul style="list-style-type: none"> Increased % of disabled students entering HE, gaining their target award and progressing to PG study and into professional or graduate employment 	<ul style="list-style-type: none"> Has a higher proportion of disabled students applied, entered and successfully completed in HE? Have greater numbers of disabled students progressed into postgraduate study or into professional or graduate employment? 	<ul style="list-style-type: none"> Student records, monitoring of activities Student records, DLHE and longitudinal DLHE

Evaluation area	Metric, output or outcome	Indicator/question	Primary data source(s)
Impacts	<ul style="list-style-type: none"> Benefits to the individual 	<ul style="list-style-type: none"> Have disadvantaged individuals benefitted from greater career prospects? Have disadvantaged students paid back higher proportions of their loan? Are greater numbers of disadvantaged students engaging in voting following completion of a HE award? Are greater numbers of disadvantaged students benefitting from better health and wellbeing following completion of a HE award? 	<ul style="list-style-type: none"> DLHE, longitudinal DLHE Student Loans Company records Surveys, focus groups with graduates, research Surveys, focus groups, independent research
	<ul style="list-style-type: none"> Benefits to the local area, society and economy 	<ul style="list-style-type: none"> Are there a greater number of disadvantaged graduates contributing financially to the local area? Are disadvantaged graduates earning at higher levels and thus making increased tax contributions? 	<ul style="list-style-type: none"> DLHE and longitudinal DLHE data HM Revenue and Customs data (may involve data sharing protocols to be in place)

APPENDIX 2: TECHNICAL SUMMARY OF ECONOMETRIC ANALYSIS

1. The aim of this appendix is to evaluate the impact of Student Opportunity (SO) funding, in terms of its impact on degree attainment, and also whether it leads to a higher proportion of a Higher Education Institution's (HEI) students both coming from and remaining in the area of the institution, before and after attendance.
2. The main part of the appendix focuses on the degree attainment question. The idea is to determine the additional number of graduates produced by an HEI as a result of its SO funding, and then to evaluate those additional graduates in terms of the additional wages that they receive, and their higher probability of being employed, as a result of their degree. The benefits of the additional degrees obtained are therefore evaluated relatively narrowly in terms of their additional value in the labour market. This is not to deny that additional benefits exist, to the individual in terms of for example improved health and social capital, and to the economy in terms of for example lower crime and improved citizenship. However, such benefits are difficult to quantify, and therefore difficult to include in a quantitative analysis such as this. The economic benefits identified in this analysis should therefore be viewed as a lower bound to the total benefits obtained by society in general.
3. The following section describes the data to be used and the methodology employed, in order to estimate the value of SO funding on labour market outcomes. The results of this analysis are then presented in the following section, from paragraph 18 onwards. The following section considers the relationship between SO funding and the rate of study and subsequent employment by local residents to the HEI. A final section summarises and concludes.

Data and methodology

4. The analysis evaluating the higher levels of degree attainment that results from SO funding proceeds in two stages. In the first stage, the additional numbers of degrees obtained as a result of the SO funding received by HEIs is estimated. This relies on data provided by HEFCE on the following variables:
 - The amount of SO funding received by the HEI in a particular year, over the period 2004-05 to 2013-14. The total amount received each year is also sub-divided into its five components, for separate analysis in some specifications: Disability allocation, Full-time widening access, Part-time widening access, Full-time improved retention and Part-time improved retention.
 - The number of (UK and European Union-domiciled) qualifiers from HEIs each year, over the period 2008-09 to 2012-13. The number of qualifiers is divided into

Participation of Local Areas (POLAR) quintiles depending on the region of their home address. This allows us to determine on which POLAR grouping the SO funding has had the most effect. As well as the total number of qualifiers, the data also reports, separately, the number who graduate in a high-paying or low-paying subject¹⁴⁸, and the number who receive a high-classification or low-classification degree.¹⁴⁹

- The total number of young students who entered the HEI in each year, over the period 2002-3 to 2012-13.
5. The sample consisted of all HEIs in receipt of SO funding and with degree-awarding powers. Therefore colleges of Further Education, which may offer some degree level courses but which do not award their own degrees, were not included in the sample. In total, 111 HEIs were included, observed for a maximum of five years, 2008-09 to 2012-13, this being the period for which the outcome variable, the number of qualifiers, was observed. Missing data for some HEIs in some years reduced the total sample below the maximum 555, with 532 observations used to estimate the equations.
 6. The data across institutions and years was pooled into a single data set, which was therefore longitudinal in nature, observing the same HEIs at different points in time. The methodology used was regression analysis, whereby degree attainment was the dependent variable, regressed against SO funding, number of entrants and year dummies. Separate equations were estimated for the number of qualifiers from each of the POLAR quintiles. For each POLAR quintile, separate equations were also estimated for each of the degree outcomes (high/low pay subject and high/low classification degree). Thus, 20 equations in total were estimated (five quintiles by four degree attainment types).
 7. The reason for considering the different types of degrees was to allow for the fact that different degrees have different values in the labour market. High-paying degrees lead to a higher wage return than low-paying degrees, as their name implies, while higher classification degrees also lead to a higher return. The value of SO funding on degree attainment will therefore clearly depend on the type of degrees being additionally obtained. If the additional degrees due to funding are in low value subjects or obtaining a low grade classification, then their value, and so the value of the funding, will be lower than if they are in high paying subjects and/or with high classifications. Ideally, a finer disaggregation of subject and classification would have been used, as well as cross-groupings between subject and classification. However, available data would not allow such finer disaggregation, with cell sizes in each category becoming too small.

¹⁴⁸ The high-paying subjects are medicine, law, engineering, maths/computing and physical science. All other subjects are classified as low pay subjects.

¹⁴⁹ High-classification degrees are defined as either first class or upper second class degrees. All other classes are defined as low-classification.

8. In the estimated equations, the number of entrants variable was lagged by three years. This is because the number of graduates will be a function of the number of entrants in that cohort of students who began their studies mostly three years ago. This variable is included to control for varying intake sizes both between HEIs and within HEIs over time. In addition the SO funding variable was lagged by four years. This was done for two reasons. Firstly, the four year lag seemed more appropriate, if much of the funding is used to attract young people from low POLAR areas into HE, and so the key funded activity actually took place before they started university. The second reason is more technical, and is to avoid endogeneity bias on the SO funding variable, caused by potential reverse causality, and the level of funding being a function of the number of students (which in turn is related to the outcome variable of the number of students graduating). By using the four year lag of the funding variable, the variable is measured before any of the students for which the outcome variable is observed had started university, and so the funding variable cannot be a function of the outcome variable, thus removing the possibility of reverse causality.
9. The methodology used to estimate the equations is fixed effects regression analysis. Fixed effects makes use of the fact that the data set is longitudinal in nature, with the same institutions observed in different years, to express all variables in each year in terms of deviations from the institution-specific mean. The advantage of using this approach is that it allows us to control for any unobserved characteristics of institutions that are constant over time (hence the name 'fixed effects'), since the deviation from the mean of any constant variable will be zero and hence will drop out from the equation. In this way, the effect of any unobserved characteristics of HEIs that cannot otherwise be controlled for is removed from the estimated equations. If such characteristics were correlated with both funding receipt and degree attainment levels, then a failure to control for their effect would produce a biased coefficient on the former variable. The use of fixed effects regression therefore removes any potential bias on the estimated coefficients (as long as the assumption holds that the relevant unobserved characteristics of institutions are constant over time). Thus, in a fixed effects framework, the effect of SO funding on degree attainment is identified using the time series variation in funding within institutions, rather than the cross-section variation across institutions, which could be correlated with many other unobserved characteristics of the institutions.
10. The end result of the analysis in the first stage will therefore be estimates of the increase in the number of students obtaining a degree, by POLAR quintile of permanent residence and either by high/low paying subject or by high/low degree classification. The second stage of the analysis is to estimate the value of such additional degrees, in terms of wage premiums and higher probabilities of being employed. For this second stage, data from the Labour Force Survey (LFS) was used. The LFS is a quarterly survey of a nationally representative sample of households from across the UK, with all members of selected households

participating in the survey.¹⁵⁰ In order to produce good sample sizes with which to estimate wage and employment returns for disaggregated groups, quarterly surveys from 2011 quarter 1 to 2014 quarter 4 were appended to each other to produce a pooled dataset. Since each household remains in the LFS for five successive quarters, only their first appearance in the survey was included in the pooled dataset created, so that no individual was in the pooled data set more than once. The resulting dataset contained around 200,000 individuals across the four years.

11. The sample was then reduced to focus on relevant specific groups, namely those whose highest qualification is a degree, or two or more A levels. The former can be seen as the ‘treatment’ group, who are sub-divided according to high/low-paying subjects and high/low degree classifications, in exactly the same way as the institution-level data described above. Individuals with two or more A levels are used as the ‘control’ or ‘comparison’ group, providing an estimate of how much graduates would have earned if they had not obtained their degree. Individuals with two or more A levels were chosen for this role, given that two or more A levels are the normal minimum qualifying standard required for entry to an HEI. It is therefore a reasonable assumption that the graduates who we observe would have had two or more A levels, which would therefore be their highest qualification in the absence of obtaining their degree.
12. The estimated wage equations were semi-logarithmic equations, regressing the natural log of the usual weekly wage, against a degree indicator and a series of control variables.¹⁵¹ Four separate equations were estimated for each of the four degree outcomes observed in the data: high/low-paying subject and high/low degree classification. Weekly wages were chosen for the dependent variable because an estimate of the weekly wage differential is easier to convert into an annual wage difference, by multiplying by 52, as compared to an hourly wage difference, which requires some knowledge of weekly hours of work in order to convert the hourly wage rate into an annual wage. The inclusion of hours of work in the estimated equations would likely have biased the other coefficients, due to the endogenous nature of a choice variable such as hours of work. We therefore consider weekly wages and assume weekly hours are the same for treatment and control groups. Clearly, there could still be differences in the hours of work between those with and without a degree. Therefore, the analysis was restricted to those individuals who work full-time, across whom there will be more consistency in terms of hours.
13. The estimated employment equations were probit equations, to allow for the fact that the dependent variable was a dummy variable taking only the values of 0 or 1, depending on whether the individual was employed or not. The estimated coefficients were used to derive

¹⁵⁰ ‘Proxy’ responses are provided for those members of the household who are unavailable at the time of the survey, by those members who are present.

¹⁵¹ The control variables included were for gender, age and ethnicity. An age-squared term was included to allow for non-linearities in the age-earnings profiles. In addition, regional and year dummy variables were included.

the ‘marginal effects’, i.e. the change in the probability of an individual being employed, as the dependent variable changes by 1 unit (or changes from 0 to 1 in the case of a dummy explanatory variable). Note that, in defining the employment rate, both unemployed and inactive individuals were included in the zero category. The analysis therefore considers the total employment effect and not just the effect conditional on having chosen to enter the labour force (i.e. unemployment plus inactivity, not just unemployment). The employment equation contained the same control variables as the earnings equation.

14. Having obtained point estimates of the wage premium and higher employment likelihood of those with a degree compared to those with at best two or more A levels, it was then necessary to use these to derive lifetime wage differences. This was done as follows. First, the age-earnings profile for individuals with two or more A levels was derived by regressing wage against age and age-squared variables for this group of workers only, and then using the estimated coefficients to give a predicted wage at every age of the working life for such workers. This was then adjusted for the probability that such workers will actually be employed and so in receipt of such a wage, at each point in their lives. The probability of being employed at each age was calculated as the mean employment rate across a moving five year window centred on each successive age. The wage at each age was then multiplied by this estimated probability of being employed. The derived employment-adjusted wage was then uprated at each age, to allow for real earnings growth over the lifetime, and the fact that current wages are being used to predict wages in the future. The assumption used was that real earnings growth will be 2 per cent per annum.
15. Having obtained the age-earnings profile for individuals with two or more A levels across their working lives, this was then uprated for graduates by the estimated wage and employment differentials, derived above from the semi-logarithmic wage equation and the employment probit equation. Thus, at every age across the working lifetime, the predicted wage for someone with two or more A levels is taken and increased by the estimated average wage differential between someone with a degree and someone with two or more A levels, while the probability of being in employment is similarly uprated. The assumption behind this method is that the wage and employment differentials are constant across the working life. The LFS does not provide sufficiently large samples to estimate a separate differential at each year of the working life, so this assumption cannot be tested, but seems reasonable at least as a first approximation.
16. The outcome of this analysis is therefore an age-earnings profile for graduates (in fact, four profiles, since the analysis is undertaken separately for those graduating in high/low-paying subjects, and with high/low-classification degrees). The gap between the graduate profile and the A level profile therefore provides an estimate of the value of the degree at every age throughout the working life. Note that this produces a negative number for the first three years, when the A level individuals are in work (with probability given by the average

employment rate as described above), while the future graduate is studying and so not earning.¹⁵² After three years, however, when the student graduates and begins employment (again with the probability of finding employment incorporated into the analysis, as described above), then the estimated value of the degree turns positive, given the positive wage differentials and employment probabilities to having a degree. One final step is required, to take account of the fact that the benefits of the degree occur in the future and throughout the working life. The value of such benefits therefore needs to be discounted back to their current value.¹⁵³ The discount rate was assumed to be 3.5 per cent, in accordance with HM Treasury's Green Book guidance. These future discounted benefits at each age of the working life were then finally summed to produce the NPV – the value in today's money of the additional benefits of acquiring a degree. The estimated NPV could then be used to provide a value of the additional attainment levels due to the SO funding, as estimated in the first stage. The following section provides the results from this analysis.

17. Having obtained these lifetime age-earnings profiles, we can also estimate the lifetime tax intake from a graduate in each of the four degree categories, compared to that from someone with two or more A levels. In this way, the gain to the Exchequer from SO funding can also be derived. In particular, we calculated the income tax, employee and employer National Insurance contributions and VAT that will be paid by/for the typical graduate and individual with two or more A levels. In order to do so, it was assumed that current tax and NI rates will remain at their current values throughout the working lives of the graduates, while the thresholds between tax and NI brackets (where, for example, the 40 per cent tax rate starts) were assumed to grow by 2 per cent per year throughout the individuals' working lives (thus consistent with the 2 per cent per annum real earnings growth applied to the currently observed wages). For VAT intake, the assumptions made were that the marginal propensity to consume is 0.64, so that 64 per cent of any additional income is consumed, and that the average VAT rate across all goods is 10 per cent. These assumptions match those made in a BIS report¹⁵⁴. Having estimated the tax intake in this way from a graduate in each degree category and an individual with two or more A levels, the additional tax intake from graduates was calculated, at every age of their lives, then discounted and summed over time to produce the NPV of the Exchequer benefits, in the same way that the NPV of the wage benefits to graduates were calculated, above.

¹⁵² Any part-time earnings obtained whilst studying are not considered here.

¹⁵³ Such discounting takes account of the fact that receiving money in the future would not have as much value as receiving that money today. If an individual had the choice of £100 today, the amount they would need in the future to just make them just indifferent between receiving the money now or receiving the higher amount later, would provide an indicator of their discount rate. For example, if the individual was indifferent between receiving £100 or £105 in a year's time, then her discount rate would be 5%.

¹⁵⁴ BIS (2011). *The Returns to Higher Education Qualifications*. London, UK: Department for Business, Innovation and Skills. Research Paper Number 45.

Results

18. The first stage results, estimating the fixed effects regressions to determine the relationship between SO funding and the number of graduates, are presented in Table 5. As described above, the analysis was undertaken separately for each degree type (high/low-paying subject and high/low degree classification) and for each POLAR quintile within degree type. Each coefficient in Table 5 therefore comes from one of 20 separate regression equations.
19. The results are scaled for a £1000 increase in SO funding. Remembering that the fixed effects coefficients are identified from the variation in funding within HEIs over time, the results in the first cell suggest that each £1,000 increase in SO funding to an institution will be associated with an additional 0.003 degrees being attained in high-paying subjects, from individuals from POLAR quintile 1. The relationship is therefore small, but is positive and statistically significant. The only other POLAR quintile significantly affected by SO funding for high-paying subjects is quintile 2, who see a similar increase of 0.004 degrees.
20. Turning to graduations in low-paying subjects, significantly larger coefficients are observed, so that the major impact of SO funding is on attainment in low-paying subjects. The results show that graduations for individuals from POLAR quintiles 1 - 3 are affected by a similar amount, ranging from 0.014 to 0.017 additional degrees obtained per £1,000 of SO funding. There is also a positive and statistically significant, though smaller, relationship for POLAR quintile 4. Only the highest quintile fails to show a statistically significant relationship.
21. Across all quintile groups and both degree groups, there is therefore a total increase of 0.054 graduations per £1,000 of SO funding, with most of the increase focussed on the low POLAR quintile individuals, graduating in low-paying subjects. These additional degrees are evaluated in the lower rows of the table, which we will return to after considering the labour market returns equations.
22. The final two columns of Table 5 show the relationship between SO funding and degree attainment when disaggregated by degree classification rather than subject. Of course, the total increase in attainment per £1,000 of SO funding must be the same, 0.054 additional degrees obtained. The results show that this increase in attainment is again concentrated on individuals from the lower POLAR quintiles. There is a significant increase in first class or upper second class degrees for individuals from the first three quintiles, and in lower-classified degrees for individuals from the first two quintiles. Contrary to the degree subject results, when attainment is disaggregated by classification, the larger increase is in the higher-valued (i.e. high classification in this case) degrees. A £1,000 increase in SO funding is associated with a 0.012-0.016 increase in higher-classification degrees for individuals from each of the first three POLAR quintiles.
23. Having estimated the increase in degree attainment, the next stage is to estimate the wage and employment returns to degrees in each of the disaggregated groups, relative to

individuals holding two or more A Levels, using LFS data. These estimated returns are reported in Table 6. The wage returns to each of the degree groupings are as expected all positive and statistically significant. The wage returns vary from a 36 per cent increase relative to A levels for a degree in the high-paying group, to a 17 per cent increase for a degree in the low-paying group.¹⁵⁵ The difference in estimated returns between high- and low-classification degrees is not quite as large (28% to 18% for high- and low-classification degrees respectively). The second column reveals the employment probability marginal effects, and shows that degrees in each of the groupings increase the probability of being employed, relative to an individual with two or more A levels, by around 10 percentage points, only the low-classification degrees producing a lower marginal effect of 8 percentage points. All are statistically significant.

24. The estimated wage and employment differentials were then used to calculate the lifetime NPV of degree attainment in each of the groups, relative to holding A levels as a highest qualification, using the methodology as described in the previous section. The results are shown in the final column of Table 6. They show that obtaining a degree in a high-paying subject is associated with higher lifetime earnings of £237,058, discounted back to the present day, taking into account the higher weekly earnings and the greater probability of being in employment. The smallest NPV is observed for low-classified degrees, which yield a lifetime premium of £126,881.
25. Returning to Table 5, the NPVs just described are then multiplied by the number of additional degrees obtained as a result of the SO funding. Thus for example, the 0.004 additional degrees in high-paying subjects, when multiplied by the £237,058 lifetime NPV, have a value of £948. Similarly, the additional low-paying degrees have an additional value of £6799, a significantly larger figure, given that the funding has a larger effect on the attainment of degrees in such subjects. In total therefore, the additional £1,000 of SO funding produces greater degree attainment to the value of £7,747. If alternatively the additional degrees from £1,000 extra funding are disaggregated across classifications, then the estimated total NPV is £9,171, the estimate being higher because a greater proportion of the additional degrees are in the higher value category in this case.
26. Thus, the results of this analysis suggest that an additional £1,000 of SO funding yields economic benefits in the range of £7,747-£9,171. It should be acknowledged at this point, that this range is an upper bound for the estimated economic impact. The assumption behind the analysis is that the total difference between the wages of graduates and individuals with two or more A levels is due to the additional education of the former group. This is an extreme assumption, and an unknown, but no doubt significant, proportion of the observed wage differential will actually be due to the fact that the graduates were more able in the first place, and would have earned a higher wage anyway even without going to

¹⁵⁵ These returns are calculated as $e^{\beta} - 1$, where β is the estimated coefficient as reported in Table 2.

university. However, the benefits exceed the funding cost to such an extent that no reasonable proportion attached to prior ability could reduce the benefits below the costs. Furthermore, recall that these are only economic benefits analysed in the current analysis, and there will be further non-economic benefits of higher degree attainment that are not being considered here. The conclusion of the analysis would therefore seem to be that the SO funding is justified on efficiency grounds, with the benefits outweighing the costs. In addition, there is also support on equity grounds, given that most of the additional degrees obtained are concentrated amongst individuals from the lower POLAR quintiles.

27. Table 7 shows the Exchequer benefits of the additional degrees produced by the SO funding. The higher income earned by graduates relative to individuals with two or more A levels leads to higher income tax contributions, employee and employer NI contributions, and VAT receipts. The results show that an additional £1,000 of SO funding leads, via more higher-tax paying graduates, to an additional £4,100 - £4,850 of tax income to the Exchequer, over the working lifetime of the graduates, discounted to the present day. The range of estimates reflects the two different ways of disaggregating degrees (across subjects and across classifications). It should be borne in mind that these figures are based on the estimated wage and employment gains of graduates, and hence are subject to the caveats attached to those estimates, as described in the previous section. Furthermore, these estimates of Exchequer benefits do not take into account the cost (other than the SO funding) to the Exchequer of the additional university tuition, though given the figures are for only 0.054 of an additional graduate, these additional costs will be small. On the other hand, the estimate of the Exchequer benefits will be under-estimated to the extent that they only consider tax payments, and not state benefit receipt. It could be argued that the difference in reliance on benefits between graduates and A Level holders will be small, given that both groups are relatively well paid and make little use of in-work benefits except for non-income related benefits such as Child Benefit (which will therefore not differ on average across groups since non-income related). The omission of state benefits from the analysis will therefore also only have a small effect on the estimated figures.
28. Before leaving this section, we briefly comment on two extensions to the analysis that were considered. The first disaggregated the total SO funding into its five constituent parts, Disability allocation, Full-time widening access, Part-time widening access, Full-time improved retention and Part-time improved retention. It should be pointed out that these categories are the categories under which the funding was allocated, and not what the money was actually spent on, which is not observed in this data set. The full results are not reported here (there would be five coefficients in each of the 20 cells in Table 5 and so 100 coefficients in total). To summarise the results, the dominant categories in most specifications are the widening access ones, which are much more strongly associated with higher degree attainment in most cases than the other categories of funding. The exception is the case of the low-classified degrees, where the improved retention variables attract much the higher coefficients. It would seem that improved retention activities are focussed

more on the lower achievers, persuading them to continue and at least obtain a low-classified degree (assuming of course that the money is spent on what it was intended for).

29. The second extension considered was to interact the four-year lagged funding variable with the year dummy variables. The sign of the coefficients on these interaction coefficients would then indicate whether the relationships between funding and attainment are becoming stronger or weaker over time. The results reveal positive such coefficients in almost all cases, suggesting the relationship between funding and attainment is becoming stronger. Stronger effects in particular are observed in 2012 and 2013.

Local Participation in HE

30. The aim of this section is to briefly consider the relationship between SO funding and the proportion of graduates who both come from the local area to an HEI, and/or who then work in the local area of the HEI. Specifically, the dependent variables in the analysis measure the proportion of graduates who grew up within 15 miles of their HEI, the proportion of graduates who found work within 15 miles of their institution, and the proportion of graduates who both grew up and remained within 15 miles of their institution. The idea is therefore to determine whether SO funding benefits the local economy around universities in terms of developing the skills of local residents, who then remain in the area to the benefit of local employers. It should be pointed out, however, that it is less clear whether never leaving one's home area to either study or subsequently work is necessarily also in the best interests of the student, who in some circumstances may be better served by moving away from their local area.
31. The data used for the analysis is from the DLHE survey, whereby students are surveyed six months after graduating. To be included in the sample, individuals need to be in employment, and supply both family home and current address postcodes.
32. The methodology used is again the fixed effects method, as used in the previous section. The reason for this choice is again that it allows us to control for unobserved characteristics of HEIs that are constant over time. Thus the estimated coefficients are identified from the variation in funding over time within institutions, rather than from the variation in funding across institutions, which could be correlated with other unobserved characteristics.
33. The explanatory variables in the analysis are the same as in the previous section, namely the level of SO funding, the number of entry students as a control, plus year dummy variables. The funding variable was again lagged by four years, as in the previous section, so it measures the level of funding in the year before the graduates in question actually started university. This therefore removes the possibility of reverse causality. Because of the small size of the effects observed, the funding variables were measured in millions of pounds, rather than thousands of pounds as previously, to ease exposition. The number of entry students variable was again lagged by three years, so it measured entrance in the

year the graduates started university. The results are presented in Table 8. The estimated coefficients represent the percentage point change in the proportion of students from the local area, for a £1 million increase in an HEI's SO funding.

34. The results show no relationship between changes in total SO funding and the proportion of students in an HEI either coming from or remaining in a local area. The coefficients in all three columns are extremely small and statistically insignificant. When the funding is divided into its constituent parts, there is one statistically significant coefficient, with the part-time widening access funding being positively and statistically significantly related to the proportion of students who grew up in the local area of the HEI. No other coefficient in Table 8 approaches statistical significance however. Note that these results were not affected by the specification of the lag structure. Whether the funding variable was entered into the equation as its current value, its value lagged one year or (as in Table 8) its value lagged four years, its coefficient was always highly statistically insignificant.
35. It is perhaps of interest to note that an ordinary least square (OLS) specification of the equations in Table 8, rather than the fixed effects specification adopted, yields positive and statistically significant coefficients for the funding variable on the proportions of students who come from the local area and/or work in the local area after graduation. The coefficients are relatively sizeable, suggesting that those institutions that receive £1 million more in SO funding will have a 'local student' rate of around 7 percentage points higher. Thus, those institutions that receive more SO funding also have more local students and/or graduates staying in the area. However, the fixed effects results in Table 8 show that this cross-institution correlation is not a direct causal relationship, and is rather created by the nature of the HEIs that receive more SO funding. When we look at variation in SO funding over time within institutions, as in the fixed effects specification, then changes in the amount of funding are not associated with changes in the proportion of local students (at least, in terms of the 15 mile definition of local students used here).
36. Considering briefly other effects observable in the pooled cross-section OLS equation, the student cohort size on entry variable attracts a negative and statistically significant coefficient, suggesting that the larger institutions have a smaller proportion of local students. Also, it was possible to put regional dummy variables into an OLS specification, which was not possible with the fixed effects specification reported in Table 8.¹⁵⁶ The coefficients on the regional variables indicate significant differences in the proportion of students coming from and staying in the local area across regions. By far the highest rates are observed in the London area. In London, the average proportion of students from the local area is 34 percentage points higher than in the lowest region (the South-West), while the proportion finding employment after graduation in the local area is on average 42

¹⁵⁶ In the fixed effects specification, any regional effects are subsumed in the fixed effects of the institutions, since obviously the institution does not change its region over time.

percentage points higher in London than the South-West. After London, but with significantly lower 'locality' rates, come three regions, the North-East, the North-West and the West Midlands, followed then with a lower rate again by Yorkshire. The lowest rates of participation of local students and employment in the local area are observed in the South-East (excluding London) and the South-West.

Summary

37. This appendix describes the econometric analysis undertaken to consider the relationship between SO funding and student outcomes, in terms of degree attainment, and HE participation and subsequent employment in their local area. The main focus has been on the first issue, analysing whether increases in SO funding are associated with higher levels of degree attainment. After lagging the funding variable to ensure the causality runs from funding to student numbers, and including institution-level fixed effects to control for unobserved differences in characteristics across institutions, the results showed that an increase in an institution's SO funding is associated with a higher number of degrees obtained four years later. The increase is particularly noticeable amongst individuals from lower socio-economic status areas, in subjects that are typically low-paying in the labour market, but receiving a high classification (2:1 or above). When evaluating these additional degrees in terms of their observed value in the labour market, as measured by lifetime wage and employment probability differentials relative to individuals with at best two or more A levels, the value of the degrees obtained is shown to outweigh the cost of the additional funding provided. The fact that the gains are concentrated on individuals from poorer backgrounds provides an equity justification, in addition to this efficiency argument for funding. In addition, the Exchequer benefits due to the greater tax intake from graduates relative to non-graduates also exceeds the cost of the SO funding.
38. Had data allowed, it would have been useful to consider finer disaggregation of degree types than the two dichotomies (high/low paying and high/low classification) considered here, to more accurately estimate the value of the degrees being obtained. It would also be useful to have detailed information from the institutions on the activities undertaken with the funding, and the allocation of the total funding to each activity, in order to determine which activities are producing the good outcomes.
39. A final piece of analysis considered whether an increase in SO funding led to a higher proportion of local students in an institution, and a higher proportion of students remaining in the local area of the institution for employment after graduation. The idea was therefore to see whether SO funding benefits local economies. Although cross-sectional evidence suggests that institutions with higher levels of funding tend to attract more local students, this result seems to be due to unobserved characteristics of the institutions that attract high levels of funding, rather than the funding itself. When variation in funding within institutions over time is considered, no effect on the proportion of local students studying or subsequently working in the area is observed. Whether this is necessarily a bad outcome,

though, particularly for the students themselves, is open to debate, and it could be that geographical mobility itself is more desirable.

Table 5: Fixed effects Regression: Dependent Variable=Number of Graduating Students. Period: 2008-9-2012-13

Additional graduates per £1,000 SO Funding at t-4				
Degree type	High pay subject	Low pay subject	High classification degree	Low classification degree
POLAR quintile				
POLAR Quintile 1	0.003 (0.001)**	0.014 (0.002)**	0.012 (0.002)**	0.005 (0.001)**
POLAR Quintile 2	0.004 (0.001)**	0.017 (0.003)**	0.014 (0.003)**	0.007 (0.002)**
POLAR Quintile 3	-0.000 (0.001)	0.015 (0.003)**	0.016 (0.003)**	-0.001 (0.002)
POLAR Quintile 4	-0.000 (0.002)	0.008 (0.004)*	0.006 (0.004)	0.002 (0.002)
POLAR Quintile 5	-0.003 (0.002)	-0.004 (0.005)	-0.011 (0.006)*	0.004 (0.003)
Σ (total additional graduates)	0.004	0.050	0.037	0.017
Value	£948	£6799	£7014	£2157
Total value	£7747		£9171	

Notes: Each coefficient is from a separate regression, where the dependent variable is the number of graduating students in the named degree type from the named POLAR quintile.

Estimated equations also include year dummy variables, and the number of starting home students three years previously.

** statistically significant at the 1 per cent level, * statistically significant at the 5 per cent level

Data: HEFCE

Table 6: Estimated Wage and Employment Returns to Each Degree Type, and Derived NPV. Period 2011-2014

	Wage returns	Increased employment probability	Lifetime NPV
High pay subject	0.306 (0.015)**	0.102 (0.009)**	£237,058
Low pay subject	0.156 (0.011)**	0.100 (0.006)**	£135,973
High class degree	0.244 (0.010)**	0.096 (0.005)**	£189,578
Low class degree	0.162 (0.011)**	0.081 (0.006)**	£126,881

Notes: wage returns: dependent variable = log of weekly wages. Control variables = gender, age, age-squared and ethnicity, plus regional and time dummy variables. Estimated returns relative to control group of individuals with two or more A levels. Full-time workers only.

Employment equation: dependent variable = dummy variable taking value of 1 if employment and 0 otherwise. Control variables = gender, age, age-squared and ethnicity, plus regional and time dummy variables. Reported numbers are the marginal effects for the change in employment probability, derived from the estimated probit equations.

Lifetime NPV = discounted additional benefits from acquiring a degree in the relevant category, relative to those with two or more A levels.

** statistically significant at the 1 per cent level, * statistically significant at the 5 per cent level

Data: LFS

Table 7: Estimated NPV Exchequer Benefit from Additional Degrees Due to SO Funding

	Additional graduates per £1000 of SO funding at t-4	NPV of additional tax intake per graduate	NPV of additional tax intake due to SO funding	Total across degree types of NPV of additional tax intake due to SO funding
High pay subject	0.004	£124,523	£498	£4,138
Low pay subject	0.050	£72,794	£3,640	
High class degree	0.037	£100,187	£3,707	£4,866
Low class degree	0.017	£68,195	£1,159	

Notes: Applies current tax rates, employee and employer NI rates and VAT rates to the graduate and 2+ A level lifetime age-earnings profiles derived in Table 5, to determine the gain in the Exchequer tax intake due to the additional graduates produced by SO funding. Tax and NI threshold brackets uprated by 2 per cent each year.

Table 8: Fixed effects Regression: Dependent Variable=Proportion of Graduating Students From or Remaining in Local Area. Period: 2008-9-2012-13

Funding source in £million at t-4	Percentage of students from local area before study	Percentage of students remain in local area after study	Percentage of students both from and remain in local area
Total SO funding	0.081 (0.307)	0.441 (0.375)	-0.001 (0.288)
Of which:			
Disability allocation	-0.749 (4.620)	0.469 (5.667)	-1.480 (4.333)
Full time widening access	-0.239 (4.291)	-1.774 (5.264)	3.203 (4.026)
Part time widening access	1.599 (0.794)*	0.492 (0.794)	0.860 (0.745)
Full time improving retention	-0.386 (0.597)	0.798 (0.733)	-0.510 (0.560)
Part time improving retention	-1.293 (1.464)	-0.255 (1.796)	-1.002 (1.373)

Notes: Dependent variable is the proportion from the local area, expressed in percentage terms, where the local area is defined as within 15 miles of the HEI. Estimated equations also include year dummy variables, and the number of starting home students three years previously.

* statistically significant at the 5 per cent level

Data: Higher Education Statistics Agency DLHE survey.